



U.S. Department
of Transportation
**Federal Aviation
Administration**

Federal Aviation Regulations

Part 45 Identification and Registration Marking

This edition replaces the existing
loose-leaf Part 45.

This FAA publication of the basic Part 45, effective April 20, 1964,
incorporates Amendments 45–1 through 45–22 with preambles.

Published
December 1996

IMPORTANT NOTICE

Part 45 is now sold as a single-sale publication because of its infrequent changes. Therefore, any changes issued to this part will be sold separately by the Superintendent of Documents.

Availability of changes to part 45 will be announced in the "Status of Federal Aviation Regulations," AC 00-44, distributed free by FAA through its Advisory Circular mailing lists. If you are currently on any FAA Advisory Circular mailing list, you will also receive the "Status of Federal Aviation Regulation," AC 00-44. If you are not on any AC mailing list and wish to receive the "Status of Federal Aviation Regulations," please complete the order form below and send it to FAA.

NOTICE TO FAA AND OTHER GOVERNMENT USERS

FAA and other U.S. Government Personnel are NOT to use this form since distribution of the "Status of Federal Aviation Regulations," as well as changes to this part, will be made automatically by FAA in the same manner as distribution of this basic part.

ORDER FORM

Department of Transportation
Distribution Requirements Section, SVC-121.21
Washington, DC 20590

Please place my name on the mailing list to receive the "Status of Federal Aviation Regulations," AC 00-44. I am not currently on any Advisory Circular mailing list.

Name _____

Address _____
(Street)

(City) (State) (Zip)



•





•





PARTICIPATION IN NOTICE OF PROPOSED RULEMAKING PROCEDURES

Your purchase of Part 45 indicates that you have a need for the regulatory material that it contains.

If you want to participate in the rulemaking process when a change is proposed, please complete the form below and you will be placed on the Notice of Proposed Rulemaking mailing list. You will then receive all further Notices of Proposed Rulemaking without charge.

Upon receipt of the completed form, an individual “Record Ident” will be created from the information you submit, and your name will be placed on a computerized mailing list. The “Record Ident” is the key that controls all changes to your record and is reflected in the mailing label used to send you Notices of Rulemaking; therefore, it is important that you save one of the mailing labels and include it in any correspondence you initiate concerning this NPRM service as it will ensure positive identification and prompt response.

PART 45

NPRM ORDER FORM

U.S. Department of Transportation
Office of the Secretary
Distribution Requirements Section, SVC-121.21
Washington, DC 20590

Please place the following on the Part 45 Notice of Rulemaking mailing list:

Title or Name:

[illegible]

Company:

[illegible]

Address

(Street)

(City) (State) (Zip)

PARTICIPATION IN NOTICE OF PROPOSED RULEMAKING PROCEDURES

Your purchase of Part 45 indicates that you have a need for the regulatory material that it contains.

If you want to participate in the rulemaking process when a change is proposed, please complete the form below and you will be placed on the Notice of Proposed Rulemaking mailing list. You will then receive all further Notices of Proposed Rulemaking without charge.

Upon receipt of the completed form, an individual “Record Ident” will be created from the information you submit, and your name will be placed on a computerized mailing list. The “Record Ident” is the key that controls all changes to your record and is reflected in the mailing label used to send you Notices of Rulemaking; therefore, it is important that you save one of the mailing labels and include it in any correspondence you initiate concerning this NPRM service as it will ensure positive identification and prompt response.

PART 45

NPRM ORDER FORM

U.S. Department of Transportation
Office of the Secretary
Distribution Requirements Section, SVC-121.21
Washington, DC 20590

Please place the following on the Part 45 Notice of Rulemaking mailing list:

Title or Name:

[illegible]

Company:

[illegible]

Address _____
(Street)

(City) (State) (Zip)

Part 45—Identification and Registration Marking

Contents

Section	Page
Preambles	P - 1

Subpart A-General Provisions

45.1	Applicability	Sub. A-1
------	---------------------	----------

Subpart B-Identification of Aircraft and Related Products

45.11	General	Sub. B-1
45.13	Identification data	Sub. B-1
45.14	Identification of critical components	Sub. B-2
45.15	Replacement and modification parts	Sub. B-2

Subpart C-Nationality and Registration Marks

45.21	General	Sub. C-1
45.22	Exhibition, antique, and other aircraft: Special rules	Sub. C-1
45.23	Display of marks; general	Sub. C-2
45.25	Location of marks on fixed-wing aircraft	Sub. C-2
45.27	Location of marks; nonfixed-wing aircraft	Sub. C-2
45.29	Size of marks	Sub. C-2
45.31	Marking of export aircraft	Sub. C-3
45.33	Sale of aircraft; removal of marks	Sub. C-3





Other minor changes of a technical clarifying or relaxatory nature have been made. They are not substantive and do not impose any burden on regulated persons.

The definitions, abbreviations, and rules of construction contained in Part 1 [New] of the Federal Aviation Regulations apply to Part 45 [New].

Interested persons have been afforded an opportunity to participate in the making of this regulation, and due consideration has been given to all relevant matter presented. The Agency appreciates the cooperative spirit in which the public's comments were submitted.

In consideration of the foregoing, Chapter I of Title 14 is amended by deleting §§ 1.50, 1.50-1, 1.55-2(b) and (d), and 1.100-1.110 of Part 1; §§ 3.791 and 3.792 of Part 3; §§ 4b.750 and 4b.751 of Part 4b; §§ 6.750 and 6.751 of Part 6; §§ 7.750 and 7.751 of Part 7; § 10.30 of Part 10; § 13.20 of Part 13; § 14.20 of Part 14; the last sentence of the sixth paragraph of SR 425C; and by adding Subchapter C—'Aircraft' [New] reading as hereinafter set forth, effective April 20, 1964.

This amendment is made under the authority of §§ 307(c), 313(a), 501, 502, 601, and 603 of the Federal Aviation Act of 1958 (49 U.S.C. 1348(c), 1354(a), 1401, 1402, 1421, and 1423).

Amendment45-1

Miscellaneous Amendment

Adopted: January 26, 1966

Effective: January 26, 1966

(Published in 32 F.R. 1268, February 2, 1966)

The purpose of this amendment is to remove the geographical and airspeed limitations in the marking requirement applicable to antique aircraft.

Section 45.21(e) contains marking requirements applicable to aircraft manufactured before January 1, 1933, and aircraft having the same external configuration as an aircraft for which a type certificate, airworthiness certificate, license, or any other authorization was issued before January 1, 1933, by the United States. Such aircraft are commonly referred to as "antique" aircraft. Under Section 45.21(e) an antique aircraft may display marks that are not in accord with the nationality and registration marking requirements applicable to other aircraft, if, among other things, the aircraft is operated at an airspeed of less than 180 knots TAS and within those parts of the 48 contiguous States and the District of Columbia that lie north of latitude 28° N. or west of longitude 85° W. These limitations were imposed in 1963, solely on the basis of information from the U.S. Air Force North American Air Defense Command (NORAD) that it would have no objection to the deletion of the requirement for side fuselage or tail markings on antique aircraft which are operated at less than 180 knots TAS within the continental limits of the United States, except for the Florida area.

The Agency has now been advised by NORAD that it has no objection to deleting the geographic and speed limitations for antique aircraft. The amendment makes that deletion.

Since this amendment removes an unnecessary restriction and imposes no additional burden on any person, compliance with the notice and public procedure provisions of the Administrative Procedure Act is unnecessary, and good cause exists for making it effective on less than 30 days' notice.

This amendment is made under the authority of sections 307(c), 313(a), 501 and 502 of the Federal Aviation Act of 1958 (49 U.S.C. 1348(c), 1354(a), 1401 and 1402).

In consideration of the foregoing, section 45.21(e) is amended by striking out subparagraph (2) effective January 26, 1966.

Amendment 45-2
Reduced-size Makings

Adopted: July 14, 1966**Effective: July 21, 1966**

(Published in 31 F.R. 9862, July 21, 1966)

The purpose of this amendment is to clarify the provisions of §§ 45.25 and 45.29 and to delete obsolete § 45.25(b).

The Agency has received several requests for interpretation of §§ 45.25(a) and 45.29(a) as applied in situations where one of the sets of surfaces made optional for marking by § 45.25(a) (vertical tail surfaces or sides of fuselage) was large enough for marks meeting the requirements of § 45.29 while the other one was not. The intent of these provisions has always been that full-size marks must be displayed if possible on either set of surfaces, and these sections have been so interpreted. Where neither set of surfaces is large enough for full-size marks, marks as large as practicable must be placed on the larger surfaces. These provisions are being clarified to obviate the need for further inquiries.

Section 45.25(b) contained an exception from the requirements of § 45.25(a) which by its own terms expired on January 1, 1966. This obsolete provision and references to it are therefore deleted.

Since this amendment is clarifying in nature it does not make any substantive change. Therefore, notice and public procedure thereon are not required and the amendment may be made effective upon publication.

This action is taken on the authority of sections 307(c), 313(a), and 601 of the Federal Aviation Act of 1958 (49 U.S.C. 1348, 1354, 1421).

In consideration of the foregoing, Part 45 of the Federal Aviation Regulations (14 CFR Part 45) is amended effective July 21, 1966.

Amendment 45-3
Identification of Aircraft, Aircraft Engines, and Propellers

Adopted: January 3, 1967**Effective: July 7, 1967**

(Published in 32 F.R. 187, January 10, 1967)

This amendment changes Part 21 to require compliance with the identification plate requirements of Part 45 as a prerequisite to the issue of certain airworthiness certificates, and changes Part 45 to broaden the pertinent identification plate requirements for aircraft, aircraft engines, and propellers. This amendment also removes appliances from Part 45. This amendment is based on, and is issued for the reasons contained in, Notice 66-15, published in the Federal Register on April 19, 1966 (31 F.R. 5991). Changes to the proposals in the Notice, and disposition of industry comments, are as follows.

One comment objected to proposed new section 21.182 because it would not require an aircraft altered under a Supplemental Type Certificate (STC) to have a changed or additional identification plate containing any new information related to the STC'd aircraft and that the identification plate on an STC'd aircraft should not continue to identify the modified aircraft with only the builders name, serial number, and model designation pertaining to the holder of the type or production certificate. The Agency disagrees. The identification plate has but one function: It is a means by which the Agency can positively link a given aircraft with the proper documentation so that the continuing airworthiness history of that particular aircraft can be traced throughout its service life. The burden placed on the public by the identification plate requirements should be no greater than that necessary to fulfill this function. So far as linking a particular aircraft to its proper documents is concerned, it should be noted that, while the name of the builder is essential information on the original plate (for aircraft built under a type or production certificate as well as for aircraft built from spare and surplus parts), it is not necessary to require that the builder's name on the plate be changed or that new names be added to include persons who subsequently modify the aircraft under STC's. These later modifications will be reflected in the pertinent documents. These documents can be located and traced by the information on the original plate.

Several comments concerned the location of the aircraft identification plate. The proposed section would have only required the plate to be in an "accessible external location." In the light of several

Amendment 45-2
Reduced-size Makings

Adopted: July 14, 1966**Effective: July 21, 1966**

(Published in 31 F.R. 9862, July 21, 1966)

The purpose of this amendment is to clarify the provisions of §§ 45.25 and 45.29 and to delete obsolete § 45.25(b).

The Agency has received several requests for interpretation of §§ 45.25(a) and 45.29(a) as applied in situations where one of the sets of surfaces made optional for marking by § 45.25(a) (vertical tail surfaces or sides of fuselage) was large enough for marks meeting the requirements of § 45.29 while the other one was not. The intent of these provisions has always been that full-size marks must be displayed if possible on either set of surfaces, and these sections have been so interpreted. Where neither set of surfaces is large enough for full-size marks, marks as large as practicable must be placed on the larger surfaces. These provisions are being clarified to obviate the need for further inquiries.

Section 45.25(b) contained an exception from the requirements of § 45.25(a) which by its own terms expired on January 1, 1966. This obsolete provision and references to it are therefore deleted.

Since this amendment is clarifying in nature it does not make any substantive change. Therefore, notice and public procedure thereon are not required and the amendment may be made effective upon publication.

This action is taken on the authority of sections 307(c), 313(a), and 601 of the Federal Aviation Act of 1958 (49 U.S.C. 1348, 1354, 1421).

In consideration of the foregoing, Part 45 of the Federal Aviation Regulations (14 CFR Part 45) is amended effective July 21, 1966.

Amendment 45-3
Identification of Aircraft, Aircraft Engines, and Propellers

Adopted: January 3, 1967**Effective: July 7, 1967**

(Published in 32 F.R. 187, January 10, 1967)

This amendment changes Part 21 to require compliance with the identification plate requirements of Part 45 as a prerequisite to the issue of certain airworthiness certificates, and changes Part 45 to broaden the pertinent identification plate requirements for aircraft, aircraft engines, and propellers. This amendment also removes appliances from Part 45. This amendment is based on, and is issued for the reasons contained in, Notice 66-15, published in the Federal Register on April 19, 1966 (31 F.R. 5991). Changes to the proposals in the Notice, and disposition of industry comments, are as follows.

One comment objected to proposed new section 21.182 because it would not require an aircraft altered under a Supplemental Type Certificate (STC) to have a changed or additional identification plate containing any new information related to the STC'd aircraft and that the identification plate on an STC'd aircraft should not continue to identify the modified aircraft with only the builders name, serial number, and model designation pertaining to the holder of the type or production certificate. The Agency disagrees. The identification plate has but one function: It is a means by which the Agency can positively link a given aircraft with the proper documentation so that the continuing airworthiness history of that particular aircraft can be traced throughout its service life. The burden placed on the public by the identification plate requirements should be no greater than that necessary to fulfill this function. So far as linking a particular aircraft to its proper documents is concerned, it should be noted that, while the name of the builder is essential information on the original plate (for aircraft built under a type or production certificate as well as for aircraft built from spare and surplus parts), it is not necessary to require that the builder's name on the plate be changed or that new names be added to include persons who subsequently modify the aircraft under STC's. These later modifications will be reflected in the pertinent documents. These documents can be located and traced by the information on the original plate.

Several comments concerned the location of the aircraft identification plate. The proposed section would have only required the plate to be in an "accessible external location." In the light of several

generally be determined from the manufacturer's records, or from the original airworthiness certificate. If the aircraft is one for which no records are available, the Agency will have to use collateral evidence to fix the date of manufacture. However, the expected frequency of this occurrence is too low to require the date of completion to be on each identification plate. In summary, it does not appear that the possible presence or absence of a serial number or the likelihood of deterioration as a result of aging are useful standards for determining whether the date of manufacture (or completion) should be furnished. In light of the comments received, the amendments to § 45.13(a)(4), as it appeared in the Notice, is withdrawn, and the requirement of former § 45.13(a)(4) is deleted. subsequent subparagraphs are renumbered accordingly.

A comment suggested that the rule be revised to eliminate the requirement that the manufacturer number his aircraft in the sequence of production. This amendment does not prescribe any particular pattern or sequence of assigned numbers.

The Agency appreciates the cooperative spirit in which these comments were submitted by the public.

In consideration of the foregoing, Parts 21* and 45 are amended as follows effective July 7, 1967.

These amendments are issued under the authority of sections 307(c), 313(a), 601 and 603 of the Federal Aviation Act of 1958 (49 U.S.C. 1348(c), 1354(a), 1421 and 1423).

Amendment 45-4

Three-Digit and Temporary Registration Numbers

Adopted: August 22, 1967

Effective: September 29, 1967

(Published in 32 F.R. 12555, August 30, 1967)

These amendments to Parts 45 and 47 provide specifically for the use of temporary registration numbers, sometimes called "fly-away" numbers. This action is taken on the basis of Notice 66-40 that was published in the Federal Register on November 18, 1966 (31 F.R. 14686).

Notice 66-40 proposed to provide specifically for the use of "fly-away" numbers, and to reserve three-digit aircraft identification numbers for use on FAA aircraft and as "fly-away" numbers.

The comments generally favored the portion of the proposed amendment that specifically provided for the use of "fly-away" numbers. In finalizing the amendment, these provisions were placed in a new section, 47.16, for editorial reasons. This new section also includes, in paragraph (a), a general description of "fly-away" numbers.

Two comments were received that opposed the proposed requirements that no "flyaway" number could be assigned to, or displayed on, more than one aircraft at the same time and that records of each assignment of such a number to an aircraft be kept for one year. It was contended that adoption of these proposals could cause an economic and administrative hardship on aircraft manufacturers and it was therefore requested that the existing system of issuing only one "fly-away" number to each manufacturer or aircraft dealer be retained.

Under the present practice, several aircraft of a given manufacturer are identified on delivery flights by the same identification number but the radio call number used consists of that number plus the last two digits of the aircraft serial number. Since there can be several aircraft in flight at the same time with the same identification number, it is possible that a duplication of aircraft radio call numbers could occur. Because of this, the agency has determined that the proposal requiring a different "fly-away" number for each aircraft in flight is necessary to ensure safety, and therefore that portion of the proposal is adopted as proposed in the Notice. Upon further consideration it appears that the record-keeping requirements contained in the Notice are unnecessary for the use of "fly-away" numbers on purely domestic flights since the records normally kept by manufacturers and dealers will provide sufficient documentation. However, the records required in the Notice are considered necessary for non-domestic flights with "fly-away" numbers which are being authorized for the first time by this amendment. Therefore, the holders of "fly-away" numbers will be required to keep a record, for FAA inspection, of the assignment of each number to an aircraft on flights for delivery outside the United States. For these non-domestic flights the airworthiness certificate and the Dealer's Aircraft Registration Certificate, both carried in the aircraft, will furnish documentation as complete as a regular certificate of aircraft registration. Section 47.16(d) reflects these changes.

*Part 21 is published separately.

generally be determined from the manufacturer's records, or from the original airworthiness certificate. If the aircraft is one for which no records are available, the Agency will have to use collateral evidence to fix the date of manufacture. However, the expected frequency of this occurrence is too low to require the date of completion to be on each identification plate. In summary, it does not appear that the possible presence or absence of a serial number or the likelihood of deterioration as a result of aging are useful standards for determining whether the date of manufacture (or completion) should be furnished. In light of the comments received, the amendments to § 45.13(a)(4), as it appeared in the Notice, is withdrawn, and the requirement of former § 45.13(a)(4) is deleted. subsequent subparagraphs are renumbered accordingly.

A comment suggested that the rule be revised to eliminate the requirement that the manufacturer number his aircraft in the sequence of production. This amendment does not prescribe any particular pattern or sequence of assigned numbers.

The Agency appreciates the cooperative spirit in which these comments were submitted by the public.

In consideration of the foregoing, Parts 21* and 45 are amended as follows effective July 7, 1967.

These amendments are issued under the authority of sections 307(c), 313(a), 601 and 603 of the Federal Aviation Act of 1958 (49 U.S.C. 1348(c), 1354(a), 1421 and 1423).

Amendment 45-4

Three-Digit and Temporary Registration Numbers

Adopted: August 22, 1967

Effective: September 29, 1967

(Published in 32 F.R. 12555, August 30, 1967)

These amendments to Parts 45 and 47 provide specifically for the use of temporary registration numbers, sometimes called "fly-away" numbers. This action is taken on the basis of Notice 66-40 that was published in the Federal Register on November 18, 1966 (31 F.R. 14686).

Notice 66-40 proposed to provide specifically for the use of "fly-away" numbers, and to reserve three-digit aircraft identification numbers for use on FAA aircraft and as "fly-away" numbers.

The comments generally favored the portion of the proposed amendment that specifically provided for the use of "fly-away" numbers. In finalizing the amendment, these provisions were placed in a new section, 47.16, for editorial reasons. This new section also includes, in paragraph (a), a general description of "fly-away" numbers.

Two comments were received that opposed the proposed requirements that no "flyaway" number could be assigned to, or displayed on, more than one aircraft at the same time and that records of each assignment of such a number to an aircraft be kept for one year. It was contended that adoption of these proposals could cause an economic and administrative hardship on aircraft manufacturers and it was therefore requested that the existing system of issuing only one "fly-away" number to each manufacturer or aircraft dealer be retained.

Under the present practice, several aircraft of a given manufacturer are identified on delivery flights by the same identification number but the radio call number used consists of that number plus the last two digits of the aircraft serial number. Since there can be several aircraft in flight at the same time with the same identification number, it is possible that a duplication of aircraft radio call numbers could occur. Because of this, the agency has determined that the proposal requiring a different "fly-away" number for each aircraft in flight is necessary to ensure safety, and therefore that portion of the proposal is adopted as proposed in the Notice. Upon further consideration it appears that the record-keeping requirements contained in the Notice are unnecessary for the use of "fly-away" numbers on purely domestic flights since the records normally kept by manufacturers and dealers will provide sufficient documentation. However, the records required in the Notice are considered necessary for non-domestic flights with "fly-away" numbers which are being authorized for the first time by this amendment. Therefore, the holders of "fly-away" numbers will be required to keep a record, for FAA inspection, of the assignment of each number to an aircraft on flights for delivery outside the United States. For these non-domestic flights the airworthiness certificate and the Dealer's Aircraft Registration Certificate, both carried in the aircraft, will furnish documentation as complete as a regular certificate of aircraft registration. Section 47.16(d) reflects these changes.

*Part 21 is published separately.

In commenting on the Notice, DOD stated that Armed Forces visual identification of antique and exhibition aircraft was not necessary in the contiguous 48 States. However, DOD stated that “an aircraft approaching the United States may be intercepted for visual identification regardless of its speed. We therefore recommend that antique aircraft bearing the proposed special markings be restricted to operations within the territorial airspace . . .”, and also recommended against the 180 knot limitation.

After several discussions with DOD, the FAA concludes: (1) The public interest does not require restricting the operation of exhibition and antique aircraft bearing non-standard marks to United States territorial airspace; and (2) The national defense interest requires prohibiting the operation of any exhibition or antique aircraft, that does not bear standard United States nationality and registration marks necessary for quick air-to-air identification, in an ADIZ or DEWIZ designated in Part 99 of the Federal Aviation Regulations. To carry out these conclusions, the FAA is adopting § 45.22(c)(1) that prohibits operation of these aircraft in an ADIZ or DEWIZ unless they bear standard marks temporarily. To ease the effect of § 45.22(c)(1) (including the additional burden imposed on owners of aircraft now covered by § 45.21(e)), the FAA is also adopting § 45.21(d)(3) to allow operators of these aircraft to affix standard marks with a readily removal material. These amendments allow operators of exhibition and antique aircraft to enter or leave the United States through an ADIZ or DEWIZ, but also ensure that aircraft bearing non-standard marks do not operate in these zones. As adopted, new § 45.21(d) contains the exceptions to new § 45.21(c) (including those now in effect).

New § 45.22(a) relaxes present Part 45 for operators of exhibition aircraft. With minor editorial changes, the amendments adopted are substantially those proposed in § 45.21(f) of Notice 67-15. Comments on this part of the Notice objected to requiring prior approval of the General Aviation District Office for flights within 5 miles of the takeoff airport, and expressed concern that requiring the filing of flight plans might force operators of exhibition aircraft to install radios. In adopting these regulatory rules, the FAA must do so in a manner consistent with, its responsibility for identification of aircraft under section 307(c) of the Federal Aviation Act of 1958. The FAA believes that requiring prior GADO approval or a flight plan provides the controls necessary to carry out this responsibility. Also, the FAA accepts flight plans filed in person or by telephone, and neither § 91.83 nor new § 45.22(a) requires them to be filed by radio.

The objecting comment argued that the 5-mile limitation in proposed § 45.21(f)(5)(i) was too restrictive. Since the airport control zone described in § 71.11 may exceed a 5-mile radius, the FAA agrees that the proposal was too narrow. As adopted, new § 45.22(a)(3)(i) applies to flights without the airport control zone of the takeoff airport (as designated in Subpart F of Part 71 of the Federal Aviation Regulations), or within 5 miles of that airport if it has no designated control zone. In summary, the FAA believes that allowing operation of aircraft for exhibition purposes without nationality and registration marks is fully justified under the conditions prescribed.

New § 45.22(b) extends present § 45.21(e) to all aircraft built at least 30 years ago, or having the same external configuration as an aircraft built at least 30 years ago. The 30 years are measured from the date an aircraft was built without regard to the date the aircraft was certificated or otherwise approved by the United States, or to the place it was built (in this country or a foreign country). Comments received requested clarification of these points. Other comments opposed the 30-year standard for antique aircraft in proposed § 45.21(e)(1), suggested a shorter period, but failed to present any new or convincing arguments for the shorter period. The FAA believes that 30 years is a reasonable standard for antique aircraft. Aircraft operators who do not come under § 45.22(b) may exhibit their authentically marked aircraft under § 45.22(a). Comments also asked the FAA to clarify the term “same external configuration”. The term “configuration” is commonly defined to mean “arrangement of parts; form or figure determined by the disposition of parts”. While the term “same external configuration” does not require aircraft to be “mirror images”, it would preclude major differences in the external configuration of the aircraft involved. The FAA is adopting these provisions as proposed.

New § 45.22(b)(1) is based on § 45.21(e)(5) and the following flush paragraph proposed in the Notice. One comment asked whether any marks might be displayed on the wings. With one exception, if the aircraft properly displays the marks that § 45.22(b)(1) requires, it may display other marks anywhere on the aircraft. The exception, in new § 45.22(b)(2), prohibits the display of any other mark that begins with “N” unless it is the same as the mark displayed under § 45.22(b)(1). Since other marks beginning with “N” might be too easily confused with the marks that § 45.22(b)(1) requires, their display is prohibited. However, the aircraft could display in any size, manner, or place (on the wings or elsewhere) the same mark that must be displayed on the fuselage or vertical tail surface. Other marks not beginning with “N” could be displayed anywhere.

In addition to prohibiting operations in an ADIZ or DEWIZ, § 45.22(c) specifies the other operations of exhibition and antique aircraft that are generally prohibited. New § 45.22(c)(2) combines the prohibitions

proposed in §§ 45.21(e)(2) and 45.21(f)(4), and new § 45.22(c)(3) extends proposed § 45.21(e)(4) to both exhibition and antique aircraft. The language of § 45.22(c)(3) is changed from that proposed in the Notice in response to comments received. Notice 67-15 proposed to prohibit operations of antique aircraft "for compensation or hire under an operating certificate." This was intended to prohibit holders of operating certificates from conducting operations under Parts 121, 127, 133, 135, and 137 with antique aircraft bearing non-standard marks. However, the FAA does not intend to allow holders of operating certificates to operate those aircraft if the operation is one that does not come within the applicability of Part 121, 127, 133, 135, or 137. In addition, the prohibition is also extended to operators of exhibition aircraft, since it would be inappropriate to allow holders of operating certificates to use either exhibition or antique aircraft bearing non-standard marks in air carrier or commercial operations.

To the extent that these amendments impose new burdens or modify proposals in Notice 67-15, the notice, public procedure, and effective date requirements of section 553 of Title 5 of the United States Code do not apply because these amendments either relieve existing restrictions or involve military functions of the United States. Therefore, these amendments may be made effective upon publication in the Federal Register.

This amendment is made under the authority of sections 307(a), 307(c), 313(a), 501, 502, 601, 603, and 1202 of the Federal Aviation Act of 1958 (49 U.S.C. 1348(a), 1348(c), 1354(a), 1401, 1402, 1421, 1423, and 1522).

In consideration of the foregoing, effective January 12, 1968, Part 45 of the Federal Aviation Regulations is amended by amending §§ 45.21 and 15.23, and by adding a new § 45.22.

Amendment 45-6

Critical Rotorcraft Components

Adopted: September 10, 1968

Effective: October 17, 1968

(Published in 33 F.R. 14104, September 18, 1968)

The purpose of these amendments to Parts 21, 27, 29, 43, 45, 91 and 127 of the Federal Aviation Regulations is to (1) permit rotorcraft manufacturers to adopt failsafe fatigue design practices for certain portions of the flight structure on condition that related fatigue crack detection procedures and inspection intervals are approved under the required fatigue evaluation as part of the type design and placed in a separate section of the rotorcraft maintenance manual, (2) require that the replacement times of certain critical components be similarly approved and placed in the separate section of the maintenance manual, (3) require that this section of the manual be referenced by placard in the rotorcraft, and (4) specifically require operators and maintenance personnel to comply with this section of the maintenance manual. The amendments will also require manufacturers to make certain revisions of the rotorcraft maintenance manual available to operators and require identification of certain critical components.

These amendments are based on a Notice of Proposed Rule Making (Notice No. 67-44) published in the Federal Register on October 11, 1967 (32 F.R. 14106).

A number of comments were received in response to Notice No. 67-44, most of which were in agreement with the proposal. The more pertinent of the comments that raised questions together with the changes in the proposal resulting therefrom are discussed hereinafter.

In view of the new sections that were proposed, one commentator suggested that existing §§ 27.307(a) and 29.307(a) be clarified by indicating that the structural analysis used in connection with proof of structure, be permitted to be either static or fatigue. The FAA agrees that such a change would more fully express the intent of the rule yet, not imply a change in past practice in which fatigue evaluation has generally involved testing. The sections have been amended accordingly.

As previously stated in the preamble of the Notice, the standards of new §§ 27.571, 29.571, 27.1529 and 29.1529 are intended to preserve the design objectives stated in Notice 65-42, Airframe Proposal 8, except for clarifying changes.

One commentator stated that use of the word "component" in the proposed §§ 27.571(a) and 29.571(a) could be interpreted as meaning that the entire fuselage, for example, and most of its elements are critical so that a formal fatigue evaluation could be required to be performed on each frame, stringer, panel, or combination. However, since not all parts of a flight structure, such as the fuselage, are likely to be critical in fatigue, it was suggested that the requirement be clarified to call for evaluation

proposed in §§ 45.21(e)(2) and 45.21(f)(4), and new § 45.22(c)(3) extends proposed § 45.21(e)(4) to both exhibition and antique aircraft. The language of § 45.22(c)(3) is changed from that proposed in the Notice in response to comments received. Notice 67-15 proposed to prohibit operations of antique aircraft "for compensation or hire under an operating certificate." This was intended to prohibit holders of operating certificates from conducting operations under Parts 121, 127, 133, 135, and 137 with antique aircraft bearing non-standard marks. However, the FAA does not intend to allow holders of operating certificates to operate those aircraft if the operation is one that does not come within the applicability of Part 121, 127, 133, 135, or 137. In addition, the prohibition is also extended to operators of exhibition aircraft, since it would be inappropriate to allow holders of operating certificates to use either exhibition or antique aircraft bearing non-standard marks in air carrier or commercial operations.

To the extent that these amendments impose new burdens or modify proposals in Notice 67-15, the notice, public procedure, and effective date requirements of section 553 of Title 5 of the United States Code do not apply because these amendments either relieve existing restrictions or involve military functions of the United States. Therefore, these amendments may be made effective upon publication in the Federal Register.

This amendment is made under the authority of sections 307(a), 307(c), 313(a), 501, 502, 601, 603, and 1202 of the Federal Aviation Act of 1958 (49 U.S.C. 1348(a), 1348(c), 1354(a), 1401, 1402, 1421, 1423, and 1522).

In consideration of the foregoing, effective January 12, 1968, Part 45 of the Federal Aviation Regulations is amended by amending §§ 45.21 and 15.23, and by adding a new § 45.22.

Amendment 45-6

Critical Rotorcraft Components

Adopted: September 10, 1968

Effective: October 17, 1968

(Published in 33 F.R. 14104, September 18, 1968)

The purpose of these amendments to Parts 21, 27, 29, 43, 45, 91 and 127 of the Federal Aviation Regulations is to (1) permit rotorcraft manufacturers to adopt failsafe fatigue design practices for certain portions of the flight structure on condition that related fatigue crack detection procedures and inspection intervals are approved under the required fatigue evaluation as part of the type design and placed in a separate section of the rotorcraft maintenance manual, (2) require that the replacement times of certain critical components be similarly approved and placed in the separate section of the maintenance manual, (3) require that this section of the manual be referenced by placard in the rotorcraft, and (4) specifically require operators and maintenance personnel to comply with this section of the maintenance manual. The amendments will also require manufacturers to make certain revisions of the rotorcraft maintenance manual available to operators and require identification of certain critical components.

These amendments are based on a Notice of Proposed Rule Making (Notice No. 67-44) published in the Federal Register on October 11, 1967 (32 F.R. 14106).

A number of comments were received in response to Notice No. 67-44, most of which were in agreement with the proposal. The more pertinent of the comments that raised questions together with the changes in the proposal resulting therefrom are discussed hereinafter.

In view of the new sections that were proposed, one commentator suggested that existing §§ 27.307(a) and 29.307(a) be clarified by indicating that the structural analysis used in connection with proof of structure, be permitted to be either static or fatigue. The FAA agrees that such a change would more fully express the intent of the rule yet, not imply a change in past practice in which fatigue evaluation has generally involved testing. The sections have been amended accordingly.

As previously stated in the preamble of the Notice, the standards of new §§ 27.571, 29.571, 27.1529 and 29.1529 are intended to preserve the design objectives stated in Notice 65-42, Airframe Proposal 8, except for clarifying changes.

One commentator stated that use of the word "component" in the proposed §§ 27.571(a) and 29.571(a) could be interpreted as meaning that the entire fuselage, for example, and most of its elements are critical so that a formal fatigue evaluation could be required to be performed on each frame, stringer, panel, or combination. However, since not all parts of a flight structure, such as the fuselage, are likely to be critical in fatigue, it was suggested that the requirement be clarified to call for evaluation

permit appropriate use of service experience in reevaluating flight structure in accordance with §§ 27.571 and 29.571. In this connection, laboratory tests might be made on parts that have been used in service to determine whether the original assumptions were overly conservative.

Interested persons have been afforded an opportunity to participate in the making of this amendment, and due consideration has been given to all matter presented.

In consideration of the foregoing, Parts 21, 27, 29, 43, 45, 91, and 127* of the Federal Aviation Regulations are amended effective October 17, 1968.

This amendment is made under the authority of sections 313(a), 601, 603, 604, and 605 of the Federal Aviation Act of 1958 (49 U.S.C. 1354(a), 1421, 1423, 1424, and 1425).

Amendment 45-7

Location of Aircraft Identification Plate

Adopted: September 17, 1968

Effective: September 25, 1968

(Published in 33 F.R. 14402, September 25, 1968)

The purpose of this amendment to § 45.11(a) of the Federal Aviation Regulations is to permit an alternate optional location for an aircraft identification plate.

On January 3, 1967, the Federal Aviation Administration adopted Amendment 4 (32 F.R. 187) which changed § 45.11(a) to require that an aircraft identification plate be located "near an entrance." The preamble to Amendment 4 stated that the FAA "has determined that a reasonably uniform location should be adopted, since the main purpose of the location aspect of the identification plate requirements is to facilitate identification of the aircraft during inspections or in an accident."

Since July 7, 1967, the effective date of Amendment 4, certain manufacturers of small airplanes have presented information showing that an alternate location of the identification plate would serve the purpose of identification of aircraft during inspections or accident investigations at least equally well as the location "near an entrance." A review of this information has led to the conclusion that the location of the identification plate on the fuselage near the tail surfaces, if the plate is legible to an observer on the ground, would be an acceptable optional alternate location.

Since this amendment permits an alternate procedure and imposes no additional burden on any person, I find that notice and public procedure thereon are unnecessary, and that good cause exists for making it effective on less than 30 days' notice.

In consideration of the foregoing, the second sentence of § 45.11 (a) is amended, effective September 25, 1968.

This amendment is issued under the authority of sections 307(c), 313(a), 601, and 603 of the Federal Aviation Act of 1958 (49 U.S.C. 1348(c), 1354(a), 1421, and 1423).

Amendment 45-8

Replacement and Modification Parts

Adopted: May 19, 1972

Effective: June 26, 1972

(Published in 37 F.R. 10658, May 26, 1972)

The purpose of these amendments to Parts 21 and 45 of the Federal Aviation Regulations is to revise and clarify the requirements for the manufacturer of approved replacement and modification parts for sale for installation on a type certificated product.

These amendments are based on a Notice of Proposed Rule Making (Notice 69-36) issued on August 13, 1969, and published in the Federal Register on August 20, 1969 (34 F.R. 13421). Numerous comments were received in response to Notice 69-36 and the more pertinent of these comments are discussed below. Based upon these comments and upon further consideration by the FAA, a number of substantive

*Parts 21, 27, 29, 43, 91, and 127 are published separately.

permit appropriate use of service experience in reevaluating flight structure in accordance with §§ 27.571 and 29.571. In this connection, laboratory tests might be made on parts that have been used in service to determine whether the original assumptions were overly conservative.

Interested persons have been afforded an opportunity to participate in the making of this amendment, and due consideration has been given to all matter presented.

In consideration of the foregoing, Parts 21, 27, 29, 43, 45, 91, and 127* of the Federal Aviation Regulations are amended effective October 17, 1968.

This amendment is made under the authority of sections 313(a), 601, 603, 604, and 605 of the Federal Aviation Act of 1958 (49 U.S.C. 1354(a), 1421, 1423, 1424, and 1425).

Amendment 45-7

Location of Aircraft Identification Plate

Adopted: September 17, 1968

Effective: September 25, 1968

(Published in 33 F.R. 14402, September 25, 1968)

The purpose of this amendment to § 45.11(a) of the Federal Aviation Regulations is to permit an alternate optional location for an aircraft identification plate.

On January 3, 1967, the Federal Aviation Administration adopted Amendment 4 (32 F.R. 187) which changed § 45.11(a) to require that an aircraft identification plate be located "near an entrance." The preamble to Amendment 4 stated that the FAA "has determined that a reasonably uniform location should be adopted, since the main purpose of the location aspect of the identification plate requirements is to facilitate identification of the aircraft during inspections or in an accident."

Since July 7, 1967, the effective date of Amendment 4, certain manufacturers of small airplanes have presented information showing that an alternate location of the identification plate would serve the purpose of identification of aircraft during inspections or accident investigations at least equally well as the location "near an entrance." A review of this information has led to the conclusion that the location of the identification plate on the fuselage near the tail surfaces, if the plate is legible to an observer on the ground, would be an acceptable optional alternate location.

Since this amendment permits an alternate procedure and imposes no additional burden on any person, I find that notice and public procedure thereon are unnecessary, and that good cause exists for making it effective on less than 30 days' notice.

In consideration of the foregoing, the second sentence of § 45.11 (a) is amended, effective September 25, 1968.

This amendment is issued under the authority of sections 307(c), 313(a), 601, and 603 of the Federal Aviation Act of 1958 (49 U.S.C. 1348(c), 1354(a), 1421, and 1423).

Amendment 45-8

Replacement and Modification Parts

Adopted: May 19, 1972

Effective: June 26, 1972

(Published in 37 F.R. 10658, May 26, 1972)

The purpose of these amendments to Parts 21 and 45 of the Federal Aviation Regulations is to revise and clarify the requirements for the manufacturer of approved replacement and modification parts for sale for installation on a type certificated product.

These amendments are based on a Notice of Proposed Rule Making (Notice 69-36) issued on August 13, 1969, and published in the Federal Register on August 20, 1969 (34 F.R. 13421). Numerous comments were received in response to Notice 69-36 and the more pertinent of these comments are discussed below. Based upon these comments and upon further consideration by the FAA, a number of substantive

*Parts 21, 27, 29, 43, 91, and 127 are published separately.

Many comments suggested changes to the requirements of proposed § 21.303 which merely sets forth in detail the requirements of Part 21 which are incorporated by reference in present § 21.303(a). Most of these suggestions would require substantive changes in the current requirements and are outside the scope of the Notice. Although many of the suggested changes cannot be adopted on the basis of Notice 69-36, they will be given further consideration and those having merit will be included in future rulemaking concerning this matter.

The requirement in proposed paragraph (i) of § 21.303 has been deleted because it would be an unnecessary duplication of the requirement for identification of replacement and modification parts in § 45.15 of Part 45. Proposed paragraph (j) is adopted as paragraph (i), without change.

One comment objected to the requirement in proposed paragraph (k) that the holder of a PMA must notify the FAA within 10 days after relocation or expansion of his manufacturing facilities at other locations. The commentator stated that 10 days was unduly restrictive and recommended it be changed to 30 days. The FAA does not agree. The requirement is merely one of notification and to delay notification for 30 days, particularly when critical parts are involved, would hinder the FAA's surveillance of PMA manufacturers. The amendment is adopted as proposed and designated as paragraph (j).

Proposed paragraph (l)(1) of § 21.303 has been deleted because it duplicates the requirement of paragraph (h) and the amendment to proposed paragraph (1)(2) is adopted without change and designated as paragraph (k).

Proposed § 45.15 did not expressly except small parts or parts on which marking is impractical from the requirement that parts must be marked with manufacturer's identification and the part number. However, in response to comments, it has been determined that the regulation should permit any or all of the information specified in § 45.15 to be set forth on a tag attached to the part when the part is too small or the required marking is otherwise impractical. The proposal has been revised accordingly.

Two comments recommended that proposed § 45.15 be changed to require that all the parts be marked with the manufacturer's identification to permit identification of each part that fails. The FAA does not agree. Such a requirement is not appropriate for the parts that are too small or otherwise impractical to mark. In these instances such information should be marked on a tag attached to the part or its container.

In consideration of the foregoing, Parts 21 and 45 of the Federal Aviation Regulations are amended, effective June 26, 1972.

These amendments are adopted under the authority of sections 313, 601, and 603 of the Federal Aviation Act of 1958 (49 U.S.C. 1354, 1421, and 1423), and section 6(c) of the Department of Transportation Act (49 U.S.C. 1655(c)).

NOTE: The reporting and/or recordkeeping requirements contained herein have been approved by the Bureau of the Budget in accordance with the Federal Reports Act of 1942.

Amendment 45-9

Nationality and Registration Marks on Fixed-Wing Aircraft

Adopted: August 5, 1977

Effective: September 14, 1977

(Published In 42 FR 41101, August 15, 1977)

SUMMARY: This amendment allows a reduction in the size of the required nationality and registration marks on certain fixed-wing aircraft and requires that each suffix letter used in the marks be a Roman capital letter. It is intended to provide relief requested by operators of the aircraft and to ensure needed uniformity of marks.

FOR FURTHER INFORMATION CONTACT: Raymond E. Ramakis, Flight Standards Service, Safety Regulations Division, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, D.C. 20591; telephone: (202) 755-8716.

SUPPLEMENTARY INFORMATION: Interested persons have been afforded an opportunity to participate in the making of this amendment by a Notice of Proposed Rule Making (Notice No. 74-36) issued on November 12, 1974, and published in the *Federal Register* on November 21, 1974 (39 F.R. 40862).

Due consideration has been given to all comments received in response to the Notice. Except as otherwise discussed in this amendment, the amendment and the reasons for it are identical to the proposal and the reasons set forth in the Notice.

Notice 74-36 was issued partly in response to two petitions. The Experimental Aircraft Association (EAA) petitioned for an amendment of § 45.29(b)(1) to allow display of the required nationality and registration marks no more than three inches high either in a horizontal or vertical manner on both sides of the vertical tail surface of fixed-wing small aircraft and 18-inch marks on the underside of the left wing. The Citizens Task Force on Noise Control of Seattle, Washington, petitioned the FAA to provide for under-wing markings, distinguishable by persons with normal vision for a distance of 1,000 feet.

Over 3,000 public comments were received in response to the Notice. Almost all of the commentators on the proposed under-wing marks opposed them. The majority of the commentators were concerned about the cost of the under-wing marks. The FAA estimates the minimum total cost to be over 18 million dollars. This cost could be higher due to inflation, since the proposal would allow five years for compliance with the rule.

A number of opposing commentators were of the opinion that the proposed underwing marks would not be an effective means of positive ground-to-air identification. After further consideration, the FAA agrees with these commentators. In proposing this requirement, the FAA relied on a number of cases in which violators of the Federal Aviation Regulations have been identified by under-wing marks alone or by those marks together with side or tail marks. However, after review of the comments received and all the information available on under-wing marks, it is clear that these marks are useful for identification purposes only under ideal conditions.

For these reasons, the proposed requirement for 18 inch marks on the lower surface of the left wing of fixed-wing aircraft is withdrawn, and the petition of the Citizens Task Force on Noise Control of Seattle, Washington, is denied.

In response to the EAA petition, Notice 74-36 proposed to allow 3 inch marks on the vertical tail surfaces or the sides of the fuselage on small aircraft which cannot exceed 180 knots when using 70 percent of maximum cruising power, if the proposed under-wing marks were displayed. This proposal was consistent with the current position of the Department of Defense that it no longer considers 12 inch marks as necessary for the air-to-air identification of these aircraft when they penetrate or operate in an Air Defense Identification Zone (ADIZ) or Distant Early Warning Identification Zone (DEWIZ).

Over 1,500 comments were directed to this proposal. The majority of these commentators favored using 3 inch marks without the under-wing marks. In view of the fact that 12 inch marks on the tail or fuselage have proved only minimally successful in ground-to-air identification, the 3 inch marks provision is being adopted without the proposed under-wing requirement.

However, the FAA has determined that the reference to "maximum cruising power" may be confusing, and that it would be more appropriate to use terms used in type certificate data sheets for most small aircraft. Accordingly, the provision, as adopted, references design cruising speed (V_C), maximum structural cruising speed (V_{NO}), and maximum operating limit speed (V_{MO}). When none of these speeds exceeds 180 knots, 3 inch marks may be used on the aircraft. Three inch marks may be used on an aircraft that does not have a V_C , V_{NO} , or V_{MO} , when the maximum cruising speed has been shown to the satisfaction of the Administrator to not exceed 180 knots.

Finally, Notice 74-36 proposed to insert the words "at each location" in the lead-in portion of § 45.29(b), in order to require that the character marks be the same height, width, thickness, and spacing on both sides of the aircraft. For clarity this proposal has been adopted as a new paragraph (g) in § 45.29.

DRAFTING INFORMATION

The principal authors of this document are J. F. Zahringer, Flight Standards Service, and Joseph Dorsey, Office of the Chief Counsel.

ADOPTION OF THE AMENDMENT

Accordingly, Parts 1 and 45 of the Federal Aviation Regulations (14 CFR Parts 1 and 45) are amended, effective September 14, 1977.

(Sections 307(c), 313(a), and 601, Federal Aviation Act of 1958, as amended (49 U.S.C. §§ 1348(c), 1354(a), 1421); Sec. 6(c), Department of Transportation Act (49 U.S.C. 1655(c).))

Due consideration has been given to all comments received in response to the Notice. Except as otherwise discussed in this amendment, the amendment and the reasons for it are identical to the proposal and the reasons set forth in the Notice.

Notice 74-36 was issued partly in response to two petitions. The Experimental Aircraft Association (EAA) petitioned for an amendment of § 45.29(b)(1) to allow display of the required nationality and registration marks no more than three inches high either in a horizontal or vertical manner on both sides of the vertical tail surface of fixed-wing small aircraft and 18-inch marks on the underside of the left wing. The Citizens Task Force on Noise Control of Seattle, Washington, petitioned the FAA to provide for under-wing markings, distinguishable by persons with normal vision for a distance of 1,000 feet.

Over 3,000 public comments were received in response to the Notice. Almost all of the commentators on the proposed under-wing marks opposed them. The majority of the commentators were concerned about the cost of the under-wing marks. The FAA estimates the minimum total cost to be over 18 million dollars. This cost could be higher due to inflation, since the proposal would allow five years for compliance with the rule.

A number of opposing commentators were of the opinion that the proposed underwing marks would not be an effective means of positive ground-to-air identification. After further consideration, the FAA agrees with these commentators. In proposing this requirement, the FAA relied on a number of cases in which violators of the Federal Aviation Regulations have been identified by under-wing marks alone or by those marks together with side or tail marks. However, after review of the comments received and all the information available on under-wing marks, it is clear that these marks are useful for identification purposes only under ideal conditions.

For these reasons, the proposed requirement for 18 inch marks on the lower surface of the left wing of fixed-wing aircraft is withdrawn, and the petition of the Citizens Task Force on Noise Control of Seattle, Washington, is denied.

In response to the EAA petition, Notice 74-36 proposed to allow 3 inch marks on the vertical tail surfaces or the sides of the fuselage on small aircraft which cannot exceed 180 knots when using 70 percent of maximum cruising power, if the proposed under-wing marks were displayed. This proposal was consistent with the current position of the Department of Defense that it no longer considers 12 inch marks as necessary for the air-to-air identification of these aircraft when they penetrate or operate in an Air Defense Identification Zone (ADIZ) or Distant Early Warning Identification Zone (DEWIZ).

Over 1,500 comments were directed to this proposal. The majority of these commentators favored using 3 inch marks without the under-wing marks. In view of the fact that 12 inch marks on the tail or fuselage have proved only minimally successful in ground-to-air identification, the 3 inch marks provision is being adopted without the proposed under-wing requirement.

However, the FAA has determined that the reference to "maximum cruising power" may be confusing, and that it would be more appropriate to use terms used in type certificate data sheets for most small aircraft. Accordingly, the provision, as adopted, references design cruising speed (V_C), maximum structural cruising speed (V_{NO}), and maximum operating limit speed (V_{MO}). When none of these speeds exceeds 180 knots, 3 inch marks may be used on the aircraft. Three inch marks may be used on an aircraft that does not have a V_C , V_{NO} , or V_{MO} , when the maximum cruising speed has been shown to the satisfaction of the Administrator to not exceed 180 knots.

Finally, Notice 74-36 proposed to insert the words "at each location" in the lead-in portion of § 45.29(b), in order to require that the character marks be the same height, width, thickness, and spacing on both sides of the aircraft. For clarity this proposal has been adopted as a new paragraph (g) in § 45.29.

DRAFTING INFORMATION

The principal authors of this document are J. F. Zahringer, Flight Standards Service, and Joseph Dorsey, Office of the Chief Counsel.

ADOPTION OF THE AMENDMENT

Accordingly, Parts 1 and 45 of the Federal Aviation Regulations (14 CFR Parts 1 and 45) are amended, effective September 14, 1977.

(Sections 307(c), 313(a), and 601, Federal Aviation Act of 1958, as amended (49 U.S.C. §§ 1348(c), 1354(a), 1421); Sec. 6(c), Department of Transportation Act (49 U.S.C. 1655(c).))

removal of an identification plate to be necessary when it would otherwise be damaged during certain maintenance operations such as caustic cleaning, paint removal, or sandblasting, or when the member on which the plate is fastened must be repaired or replaced. However, the removal or replacement must be done in accordance with methods, techniques, and practices acceptable to the Administrator, which are reflected in pertinent advisory circular material. The identification plate may not be installed on any aircraft, aircraft engine, propeller, propeller blade, or propeller hub other than the one from which it was removed.

One commenter indicated that he was opposed to proposed § 45.13(c) because he wished to continue to rebuild wrecked aircraft and to remove identification plates as necessary. The FAA believes that the practice of rebuilding a wrecked aircraft by replacing almost the entire aircraft and affixing the identification plate which was recovered from the wreckage is not in the public interest. This practice has been justified as "maintenance" or "repair," when it is in fact a rebuilding of the aircraft. The only person authorized to rebuild an aircraft is a person who manufactured it under a type or production certificate.

A few commenters stated that proposed § 45.13(c) might not eliminate all improper activities in this area. While § 45.13(c) may not completely deter the improper use of identification plates, such as switching identification information from a destroyed aircraft to a new one, or using stolen aircraft identification plates, it will subject persons not complying with this section to a civil penalty not to exceed \$1,000 for each such violation in accordance with Section 901 of the Federal Aviation Act.

ADOPTION OF THE AMENDMENT

Accordingly, Part 45 of the Federal Aviation Regulations (14 CFR Part 45) is amended, effective September 4, 1979, by revising paragraph (b) and adding new paragraphs (c) through (e) of § 45.13.

(Sections 307(c), 313(a), 501, and 502 of the Federal Aviation Act of 1958(49 U.S.C. 1348(c), 1354(a), 1401, and 1402) and section 6(c) of the Department of Transportation Act (49 U.S.C. 1655(c)).

NOTE: The FAA had determined that this document involves a regulation which is not significant under Executive Order 12044, as implemented by the Department of Transportation Regulatory Policies and Procedures (44 FR 11034 February 26, 1979). In addition, the FAA has determined that the expected impact of the regulation is so minimal that it does not require an evaluation.

Amendment 45-11

Eligibility for Aircraft Registration

Adopted: October 24, 1979

Effective: January 1, 1980 (

Published in 44 FR 61937, October 29, 1979)

SUMMARY: This amendment adopts rules and procedures for the registration of aircraft owned by resident aliens and by certain domestic corporations that are not United States citizens. These rules and procedures are in response to Congressional legislation which expanded the eligibility for aircraft registration to aircraft owned by these persons. The amendment also codifies FAA administrative practice with respect to registration in the name of a partnership or a trustee, or in the name of a corporation whose United States citizenship depends on a voting trust.

FOR FURTHER INFORMATION ACT: Ms. Virginia Swimmer, Acting Chief, Technical Section (AAC-251), FAA Aircraft Registry, Aeronautical Center, P.O. Box 25082, Oklahoma City, Oklahoma 73125, Telephone (405) 686-2284.

SUPPLEMENTARY INFORMATION:

Interested persons have been afforded an opportunity to participate in the making of this amendment by Notice of Proposed Rule Making No. 78-18, issued on December 22, 1978 (44 FR 63; January 2, 1979). That Notice proposed to amend Part 47 of the Federal Aviation Regulations to provide for: (1) the registration of aircraft by an individual citizen of a foreign country who has been lawfully admitted for permanent residence in the United States (referred to in this amendment as a "resident alien"), (2) the registration of aircraft by a corporation (other than a citizen of the United States) lawfully organized and doing business under the laws of the United States or any State thereof, if the aircraft is based and primarily used in the United States; and (3) a definition of "based and primarily used in the United States." These changes are to reflect recent revisions of section 501(b) of the Federal Aviation Act of 1958 (the Act).

removal of an identification plate to be necessary when it would otherwise be damaged during certain maintenance operations such as caustic cleaning, paint removal, or sandblasting, or when the member on which the plate is fastened must be repaired or replaced. However, the removal or replacement must be done in accordance with methods, techniques, and practices acceptable to the Administrator, which are reflected in pertinent advisory circular material. The identification plate may not be installed on any aircraft, aircraft engine, propeller, propeller blade, or propeller hub other than the one from which it was removed.

One commenter indicated that he was opposed to proposed § 45.13(c) because he wished to continue to rebuild wrecked aircraft and to remove identification plates as necessary. The FAA believes that the practice of rebuilding a wrecked aircraft by replacing almost the entire aircraft and affixing the identification plate which was recovered from the wreckage is not in the public interest. This practice has been justified as "maintenance" or "repair," when it is in fact a rebuilding of the aircraft. The only person authorized to rebuild an aircraft is a person who manufactured it under a type or production certificate.

A few commenters stated that proposed § 45.13(c) might not eliminate all improper activities in this area. While § 45.13(c) may not completely deter the improper use of identification plates, such as switching identification information from a destroyed aircraft to a new one, or using stolen aircraft identification plates, it will subject persons not complying with this section to a civil penalty not to exceed \$1,000 for each such violation in accordance with Section 901 of the Federal Aviation Act.

ADOPTION OF THE AMENDMENT

Accordingly, Part 45 of the Federal Aviation Regulations (14 CFR Part 45) is amended, effective September 4, 1979, by revising paragraph (b) and adding new paragraphs (c) through (e) of § 45.13.

(Sections 307(c), 313(a), 501, and 502 of the Federal Aviation Act of 1958(49 U.S.C. 1348(c), 1354(a), 1401, and 1402) and section 6(c) of the Department of Transportation Act (49 U.S.C. 1655(c)).

NOTE: The FAA had determined that this document involves a regulation which is not significant under Executive Order 12044, as implemented by the Department of Transportation Regulatory Policies and Procedures (44 FR 11034 February 26, 1979). In addition, the FAA has determined that the expected impact of the regulation is so minimal that it does not require an evaluation.

Amendment 45-11

Eligibility for Aircraft Registration

Adopted: October 24, 1979

Effective: January 1, 1980 (

Published in 44 FR 61937, October 29, 1979)

SUMMARY: This amendment adopts rules and procedures for the registration of aircraft owned by resident aliens and by certain domestic corporations that are not United States citizens. These rules and procedures are in response to Congressional legislation which expanded the eligibility for aircraft registration to aircraft owned by these persons. The amendment also codifies FAA administrative practice with respect to registration in the name of a partnership or a trustee, or in the name of a corporation whose United States citizenship depends on a voting trust.

FOR FURTHER INFORMATION ACT: Ms. Virginia Swimmer, Acting Chief, Technical Section (AAC-251), FAA Aircraft Registry, Aeronautical Center, P.O. Box 25082, Oklahoma City, Oklahoma 73125, Telephone (405) 686-2284.

SUPPLEMENTARY INFORMATION:

Interested persons have been afforded an opportunity to participate in the making of this amendment by Notice of Proposed Rule Making No. 78-18, issued on December 22, 1978 (44 FR 63; January 2, 1979). That Notice proposed to amend Part 47 of the Federal Aviation Regulations to provide for: (1) the registration of aircraft by an individual citizen of a foreign country who has been lawfully admitted for permanent residence in the United States (referred to in this amendment as a "resident alien"), (2) the registration of aircraft by a corporation (other than a citizen of the United States) lawfully organized and doing business under the laws of the United States or any State thereof, if the aircraft is based and primarily used in the United States; and (3) a definition of "based and primarily used in the United States." These changes are to reflect recent revisions of section 501(b) of the Federal Aviation Act of 1958 (the Act).

As adopted, § 47.9(e) specifically provides that the records which the corporation is required to maintain must be made available for inspection by the Administrator upon request. Section 47.9(a)(4) requires that the corporation submit with its application the location where these records will be maintained.

New § 47.41(a)(8)(ii) is being clarified by relating lapse of registration due to noncompliance with the “based and primarily used” requirement to the end of each six-month period.

One comment was received on proposed § 47.7(c) which deals with registration by a trustee when a beneficiary under the trust is neither a U.S. citizen nor a resident alien or when a trustee or beneficiary is directly or indirectly controlled by foreign interest. Under those circumstances, § 47.7(c)(2)(iii) requires each trustee to submit an affidavit establishing that the trustee is not aware of anything which would give more than 25% of the power to influence or limit the trustee’s authority to persons who are not United States citizens or resident aliens.

The rule further provides that in those circumstances, the trust agreement, which must be submitted, must provide that if persons who are not United States citizens or resident aliens have the power to direct or remove a trustee, then those persons may not have more than 25% of the aggregate power to do so.

The commenter was concerned that the proposed regulation would prohibit nonresident aliens and foreign beneficiaries from participating (in common with other participants) in the ordinary management or direction of the trust even though the requisite 75 percent control is vested in U.S. citizens or resident aliens. In response to this comment, the regulation, as adopted, makes it clear that persons who are neither U.S. citizens nor resident aliens may exercise up to 25 percent of the aggregate power to direct or remove a trustee. In addition, the rule makes it clear that those persons may have a beneficial interest in the trust that exceeds 25 percent of the aggregate beneficial interests.

The commenter also requested that the regulation direct its limitation on control over the trustee to foreign beneficiaries who are not resident aliens, and that the trustee be allowed to take direction from other beneficiaries. The FAA agrees with this comment. Therefore, proposed § 47.7(c)(2)(ii)(A), requiring the trustee to have full authority independent of direction from any beneficiary, has not been adopted. Other provisions of the rule prevent the trustee from taking direction from a foreign beneficiary who is not a resident alien, except as permitted in § 47.7(c)(3).

One commenter believes that the limit on the percentage of foreign beneficiaries who have authority to direct or remove trustees, should not apply to beneficiaries who have only a security interest in the aircraft. However, the rule is intended to apply to these persons since the control which they may exercise over a trustee can be as substantial as that of any other beneficiary. Accordingly, the rule, as adopted, makes it clear that references to beneficiaries under a trust include any person whose security interest in the aircraft is incorporated in the trust.

It should be noted that it is not the intent of the FAA in any way to change its existing procedure for accepting applications for registration in the name of a trustee wherein the trustees and beneficiaries are all citizens of the United States, regardless of whether the trust is an active or a passive trust.

The revised definition of “owner” used in proposed §§ 47.5(b) and 47.11(a) has not been adopted. The FAA has determined that it is not necessary to revise the existing definition at this time. Accordingly, the language in the current rule has been retained. In addition to changes made as a result of comments, editorial changes have been made in the amendment for the sake of clarity. Section 45.33 has been amended to conform to revised section 501(b) of the Act. A new § 47.2, Definitions, has been added, bringing together some definitions found in the various sections of the subpart. The provisions on voting trusts in proposed § 47.7 have been incorporated into a new § 47.8.

On December 22, 1978, Special Federal Aviation Regulation No. 39 (44 FR 38; January 2, 1979) was issued, stating a tentative interpretation of section 501 (b)(1)(A)(ii), effective immediately. Interested persons were invited to submit comments, but no comments have been received. This amendment to Part 47 covers the same subject matter, without change in the interpretation of the statute in the Special Federal Aviation Regulation. That special regulation is thus superseded and is being revoked herein.

ADOPTION OF AMENDMENTS

Accordingly, Special Federal Aviation Regulation No. 39 (44 FR 38; January 2, 1979) is revoked, effective January 1, 1980, and Parts 45 and 47 of the Federal Aviation Regulation; (14 CFR Parts 45 and 47) are amended, effective January 1, 1980. (Sections 307(c), 313(a), 501, 503 1102, Federal Aviation Act of 1958, as amended (49 U.S.C. 1348(c), 1354(a), 1401, 1403, and 1502, and Sec. 6(c), Department of Transportation Act (49 U.S.C. 1655(c)).

NOTE: The FAA has determined that this document involves a regulation which is not significant under Executive Order 12044, as implemented by DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979). In addition, the FAA has determined that the expected impact of the regulation is so minimal that it does not require an evaluation.

Amendment 45-12

Airworthiness Review Program-Amendment No. 8A: Aircraft, Engine, and Propeller Airworthiness, and Procedural Amendments

Adopted: August 27, 1980

Effective: October 14, 1980

(Published in 45 FR 60154, September 11, 1980)

SUMMARY: These amendments to the Federal Aviation Regulations update and improve the airworthiness standards applicable to the type certification of aircraft, engines, propellers, related operating rules, and procedural requirements. These amendments are part of the Airworthiness Review Program.

FOR FURTHER INFORMATION CONTACT: Marvin J. Walker, Regulatory Review Branch, AVS-22, Safety Regulations Staff, Associate Administrator for Aviation Standards, Federal Aviation Administration, 800 Independence Avenue, SW, Washington, D.C. 20591, Telephone: (202) 755-8714.

SUPPLEMENTARY INFORMATION:

These amendments are the ninth and last in a series of amendments issued as part of the Airworthiness Review Program. The following amendments have previously been issued as part of this program:

Title and FEDERAL REGISTER (FR) Citation

- Amendment No. 1: Form Number and Clarifying Revisions (40 FR 2576; Jan. 14, 1975)
- Amendment No. 2: Rotorcraft Anticollision Light Standards (41 FR 5290; Feb. 5, 1976)
- Amendment No. 3: Miscellaneous Amendments (41 FR 55454; Dec. 20, 1976)
- Amendment No. 4: Powerplant Amendments (42 FR 15034; March 17, 1977)
- Amendment No. 5: Equipment and Systems Amendments (42 FR 36960; July 18, 1977)
- Amendment No. 6: Flight Amendments (43 FR 2302; Jan. 16, 1978)
- Amendment No. 7: Airframe Amendments (43 FR 50578; Oct. 30, 1978)
- Amendment No. 8: Cabin Safety and Flight Attendant Amendments (45 FR 7750; Feb. 4, 1980)

These amendments are for the most part based on Notice 75-31 which was published in the FEDERAL REGISTER on July 11, 1975 (40 FR 29410), as well as a number of proposals contained in the following notices of proposed rule making: Notice 75-10 (40 FR 10802; March 7, 1975); Notice 75-19 (40 FR 21866; May 19, 1975); and Notice 75-26 (40 FR 24802; June 10, 1975). Amendments based on the latter three notices have already been issued as a part of the Airworthiness Review Program, specifically those titled Miscellaneous Amendments, Powerplant Amendments, and Airframe Amendments, respectively. Final action on certain of the proposals was deferred, however, at the time the amendments were issued as further consideration and review of these proposals was considered necessary. In other cases, final action was deferred so that they could be considered together with related proposals contained in other notices.

Certain proposals identified as Group 2 in Appendix I to Notice 75-31 were deferred to be dealt with in a later notice as a part of the Airworthiness Review Program. These proposals all addressed the concept of periodically updating the certification basis of airplane models in long-term production. Such recertification every five or ten years would be intended to ensure that the level of safety of all airplanes in service keep pace with the current level of safety expectations. The FAA has now determined that these proposals more appropriately should be examined as a separate issue in a future regulatory action. Accordingly, the proposals identified as Group 2 in Appendix 1 to Notice 75-31 are being dropped from the Airworthiness Review Program.

Proposals relating to cabin safety and flight attendants, which are identified in this amendment, were extracted from Notice 75-31 (40 FR 29410; July 11, 1975) and handled on an expedited basis. Those rules were published in the Cabin Safety and Flight Attendant Amendments (45 FR 7750; February 4, 1980).

NOTE: The FAA has determined that this document involves a regulation which is not significant under Executive Order 12044, as implemented by DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979). In addition, the FAA has determined that the expected impact of the regulation is so minimal that it does not require an evaluation.

Amendment 45-12

Airworthiness Review Program-Amendment No. 8A: Aircraft, Engine, and Propeller Airworthiness, and Procedural Amendments

Adopted: August 27, 1980

Effective: October 14, 1980

(Published in 45 FR 60154, September 11, 1980)

SUMMARY: These amendments to the Federal Aviation Regulations update and improve the airworthiness standards applicable to the type certification of aircraft, engines, propellers, related operating rules, and procedural requirements. These amendments are part of the Airworthiness Review Program.

FOR FURTHER INFORMATION CONTACT: Marvin J. Walker, Regulatory Review Branch, AVS-22, Safety Regulations Staff, Associate Administrator for Aviation Standards, Federal Aviation Administration, 800 Independence Avenue, SW, Washington, D.C. 20591, Telephone: (202) 755-8714.

SUPPLEMENTARY INFORMATION:

These amendments are the ninth and last in a series of amendments issued as part of the Airworthiness Review Program. The following amendments have previously been issued as part of this program:

Title and FEDERAL REGISTER (FR) Citation

Amendment No. 1: Form Number and Clarifying Revisions (40 FR 2576; Jan. 14, 1975)

Amendment No. 2: Rotorcraft Anticollision Light Standards (41 FR 5290; Feb. 5, 1976)

Amendment No. 3: Miscellaneous Amendments (41 FR 55454; Dec. 20, 1976)

Amendment No. 4: Powerplant Amendments (42 FR 15034; March 17, 1977)

Amendment No. 5: Equipment and Systems Amendments (42 FR 36960; July 18, 1977)

Amendment No. 6: Flight Amendments (43 FR 2302; Jan. 16, 1978)

Amendment No. 7: Airframe Amendments (43 FR 50578; Oct. 30, 1978)

Amendment No. 8: Cabin Safety and Flight Attendant Amendments (45 FR 7750; Feb. 4, 1980)

These amendments are for the most part based on Notice 75-31 which was published in the FEDERAL REGISTER on July 11, 1975 (40 FR 29410), as well as a number of proposals contained in the following notices of proposed rule making: Notice 75-10 (40 FR 10802; March 7, 1975); Notice 75-19 (40 FR 21866; May 19, 1975); and Notice 75-26 (40 FR 24802; June 10, 1975). Amendments based on the latter three notices have already been issued as a part of the Airworthiness Review Program, specifically those titled Miscellaneous Amendments, Powerplant Amendments, and Airframe Amendments, respectively. Final action on certain of the proposals was deferred, however, at the time the amendments were issued as further consideration and review of these proposals was considered necessary. In other cases, final action was deferred so that they could be considered together with related proposals contained in other notices.

Certain proposals identified as Group 2 in Appendix I to Notice 75-31 were deferred to be dealt with in a later notice as a part of the Airworthiness Review Program. These proposals all addressed the concept of periodically updating the certification basis of airplane models in long-term production. Such recertification every five or ten years would be intended to ensure that the level of safety of all airplanes in service keep pace with the current level of safety expectations. The FAA has now determined that these proposals more appropriately should be examined as a separate issue in a future regulatory action. Accordingly, the proposals identified as Group 2 in Appendix 1 to Notice 75-31 are being dropped from the Airworthiness Review Program.

Proposals relating to cabin safety and flight attendants, which are identified in this amendment, were extracted from Notice 75-31 (40 FR 29410; July 11, 1975) and handled on an expedited basis. Those rules were published in the Cabin Safety and Flight Attendant Amendments (45 FR 7750; February 4, 1980).

a type certificate, notwithstanding a showing of compliance with the applicable airworthiness standards designated in accordance with § 21.17, if the Administrator finds an unsafe feature or characteristic of the product for the category in which certification is requested.

Sections 21.16, 21.17, and 21.21, taken together with FAA policy in designating the applicable regulations must recognize and balance four important considerations: (1) the FAA has an obligation under Section 601 of the Federal Aviation Act of 1958 to keep the airworthiness standards of this subchapter (i.e., FARs 23, 25, 27, 29, 31, 33, and 35) as current as practicable; (2) the type certificate applicant has a right and a need to know, in very specific terms, what the applicable airworthiness standards will be in order to finalize the detail design of its product and to enable the applicant to make reasonable performance guarantees to its potential customers; (3) in the interests of safety, rapid technological advances presently being made by the civil aircraft industry require that the FAA be able to issue special conditions to address truly novel or unusual design features that it has, as yet, not had an adequate opportunity to envisage in the airworthiness standards through the general rulemaking process; and (4) because the airworthiness standards of this subchapter are intentionally objective in nature to allow flexibility in design, the FAA must retain the prerogatives both to make equivalent safety findings and to deny a type certificate whenever an unsafe design feature or characteristic is found during the type certification process.

The phrase “novel or unusual” as used in § 21.16 is a very relative term. As used hereafter in applying § 21.16 to justify the issuance of special conditions, “novel or unusual” will be taken with respect to the state of technology envisaged by the applicable airworthiness standards of this subchapter. It must be recognized that in some areas which will vary from time to time the state of the regulations may somewhat lag the state of the art in new design because of the rapidity in which the state of the art is advancing in civil aeronautical design and because of the time required to develop the experience base needed by the FAA to proceed with general rule making. Applicants for type certification of a new design have the opportunity to mitigate the impact of not knowing the precise airworthiness standards to be applied for “novel or unusual design features” by consulting with the FAA early in their certification planning when such features are suspected or known by the applicant to exist. It should also be recognized that, because of the intentional objective nature of the airworthiness standards of this subchapter, many new design features which might be thought of as “novel or unusual design features” may already be adequately covered by existing regulations, thus obviating the need to issue special conditions.

Henceforth, the special condition will not be issued for general upgrading of the applicable airworthiness standards when novel or unusual design features are not involved. Whenever the FAA determines that an upgrading of the airworthiness standards of this subchapter is warranted, the upgrading will be promulgated as an amendment to this subchapter consistent with the general rulemaking procedures of FAR Part 11, the Administrative Procedure Act, and Executive Order 12044. Should the FAA conclude that there is a compelling safety need to apply a proposed amendment retroactively to designs already type certificated or to designs for which a type certificate application is in progress, the retroactive aspects of the proposed amendment, if supportable by a regulatory analysis completed in accordance with Executive Order 12044, will be announced in the notice or proposed rule making for that amendment. Public comments on the proposed retroactive aspects will be considered in determining the applicability of the adopted rule.

A number of products for which special conditions have not as yet been issued are undergoing type certification at the time of this amendment. Should the FAA conclude that recent or future amendments to this subchapter should be applied to these products that would not otherwise be applicable under § 21.17(a)(1) then an amendment to require retroactive application will be proposed and acted upon through the general rulemaking process explained above, in lieu of issuing special conditions under § 21.16.

Also, the provisions of § 21.21(b)(2) will no longer be used to justify the issuance of special conditions. However, just as an Airworthiness Directive may be issued under Part 39 to require the correction of an unsafe condition that is likely to exist or develop in a product of the same type design, notwithstanding a showing of compliance with the applicable airworthiness standards, § 21.21(b)(2) may continue to be used to deny issuance of a type certificate if a similar unsafe feature or characteristic is found during the type certification process, notwithstanding a showing of compliance with requirements designated by § 21.17. The unsafe features and characteristics envisaged by § 21.21(b)(2) are those related to specific design configuration or product characteristics of a particular design, that one would not normally expect the applicable airworthiness standards to specifically preclude because of their intentionally objective nature.

It is the practice of the FAA to develop and publish a Type Certificate Data Sheet as an integral part of each type certificate. The type certification basis is recorded on the Type Certificate Data Sheet for public information. In the future the type certification basis statement will identify not only the

applicable regulation, including special conditions, but also will identify all exemptions issued pursuant to Part 11, together with “equivalent safety findings” made in accordance with § 21.21(b)(1).

For the above reasons, Proposal 8-2 is withdrawn.

In considering its disposition of the proposal to amend § 21.16(a), the FAA realizes that a “novel or unusual design feature” today may become a common design feature of the future. The issuance of a like special condition for several product designs will most likely compel general rule making on that subject and the history of that special condition could have a very strong influence on thinking when general rule making is initiated. Also, although special conditions are regulations of particular product applicability, they are issued only in the interest of public safety. For these reasons, Part 11, and § 21.16 of Part 21 are amended to require special conditions to be issued in accordance with the existing general rule-making procedures. As is now the case, a docket will continue to be maintained for each set of special conditions, and all material in the docket will continue to be available for public review.

Proposal 8-3. This proposal is one of a group of proposals dealing with the establishment of Instructions for Continued Airworthiness and the responsibilities of maintenance personnel and aircraft operators with respect to those instructions. The group is made up of the following proposals: 8-3, 8-5, 8-21, 8-25, 8-58, 8-62, 8-64, 8-67, 8-77, 8-80, 8-89, 8-91, 8-92, 8-93, 8-97, 8-98, 8-99, 8-104, 8-106, 8-107, 8-110, and 8-111.

A commenter representing a number of scheduled air carriers objects to the requirement in § 21.31(c) that the type design include the Airworthiness Limitations section of the Instructions for Continued Airworthiness because of the information to be included in that section. Although this commenter does not object to including mandatory replacement times for life-limited parts in the Airworthiness Limitations section, the commenter strongly objects to including inspection intervals and related procedures. Under proposed §§ 43.16 and 91.163(c), the commenter points out, air carriers would be required to comply with these maintenance-related airworthiness limitations. The FAA does not agree that inspection intervals and related procedures can be omitted from the Airworthiness Limitations section of the Instructions for Continued Airworthiness. For example, the proposed Airworthiness Limitations section on a transport category airplane must contain mandatory inspection intervals and related procedures because the damage tolerance concept described in § 25.571 is predicated upon the use of such inspections to detect initial cracks in principal structural elements before crack growth under repeated loads could progress to a degree which would cause catastrophic failure of the airplane. However, the FAA does agree that §§ 43.16 and 91.163(c) should permit modification of these intervals and procedures by other FAA approved methods. Accordingly, inspection programs approved under §§ 121.25(b), 121.45, 121.367, 123.21(b), 127.13(b), 127.133, 135.5, 135.17, 135.419, 135.421, and 135.425, as defined by approved operations specifications, or an inspection program approved under § 91.217(e) constitute acceptable alternatives. The appendices to Parts 23, 25, 29, 31, 33, and 35 as adopted in this amendment require the applicant to specify (in the Airworthiness Limitations section) mandatory replacement times, inspection intervals, and related procedures. Sections 43.16 and 91.163(c) have been revised to show that only the inspection times and procedures may be adjusted under approved alternative programs.

A commenter objects to § 21.31(c), which in general is applicable to manufacturers, since continued airworthiness, which is covered in the paragraph, is the responsibility of the operator. Because this comment pertains more directly to § 21.50, it is dealt with in conjunction with Proposal 8-5.

In addition to comments relating to the Instructions for Continued Airworthiness, a commenter objects to § 21.31(a) because the proposal to include a list of drawings and specifications in the type design was not mentioned at the Airworthiness Review Conference. In fact, this proposal did appear as an FAA comment on Proposal No. 565 in the Committee I Workbook (titled “Procedures and Special Subjects”) made available to all participants at the conference, and may be found in the docket.

Several commenters object to § 21.31(d) because including analyses in the type design-(1) would be redundant, since it is already required as part of the substantiating data; (2) is unnecessary, since the drawings and specifications required under current § 21.31(a) provide the general information needed by the FAA, and (3) introduces the possibility that the FAA would require the manufacturer to provide any and all data used to prepare the drawings and specifications, thereby delaying type certification. The FAA agrees that proposed § 21.31(d) would serve no useful purpose and it is withdrawn.

Proposal 8-4. A commenter objects that § 21.35(b)(2) eliminates flight testing for reliability, contending that analysis and ground test are not dependable as a basis for certification. In the light of this comment, and after further consideration and experience, the FAA has determined that flight testing for reliability does provide safety information not necessarily obtainable from analysis and ground test. Accordingly, the proposal to delete the reference to reliability in § 21.35(b)(2) is withdrawn.

No adverse comment was received on the proposal to replace the word "airplanes" in § 21.35(b)(2) with the word "aircraft" and this amendment to § 21.35(b)(2) is adopted without change.

Proposal 8-5. A commenter objects to the continued airworthiness provisions of § 21.50(b) (and also proposed § 21.31(c)) contending that-(1) continued airworthiness is the responsibility of the operator/owner; (2) current regulations in Parts 23 and 25 already require manufacturers to make available recommended maintenance procedures for the product at the time of its delivery; (3) current operating rules require the operator/owner to establish and comply with a maintenance program; and (4) with respect to transport airplanes, the present FAA Maintenance Review Board (MRB) system is an entirely satisfactory way of establishing the means for maintaining airworthiness. Current FAA practice allows operators of new transport category airplanes to utilize FAA MRB recommendations (reference FAA Advisory Circular No. AC 121-22) for starting their maintenance programs, and then vary them with FAA approval as experience and operating conditions dictate. The commenter points out that, contrary to that practice, the amendment will require the manufacturer to obtain FAA approval of its recommended maintenance procedures before the airplane is type certificated, and to obtain FAA approval of revisions to those procedures (necessitated by any improvement change in the airplane) before approval of the change itself. This, the commenter states, will impose a severe and unnecessary hardship on the manufacturer.

On the first and second points, although the operator/owner does have responsibility for continued airworthiness, the FAA has found that the recommended maintenance procedures made available under current regulations are frequently inadequate in scope and content, and often do not provide a sound basis for the operator/owner to maintain the airworthiness of the aircraft. The FAA has concluded that the lack of such recommended maintenance procedures can best be remedied by requiring that they be made available to owners and operators by the type certificate or supplemental type certificate holder. On the third point, while it is true that not all operators/owners are required to establish and comply with a continuous airworthiness program, those that voluntarily wish to set up such a program are often handicapped by the lack of comprehensive instructions, which would be remedied by § 21.50(b). On the other hand, those required to establish a program will benefit from the more detailed and comprehensive instructions made available to them under § 21.50(b). On the fourth point, which is directed toward aircraft that will be maintained in accordance with an FAA approved operations specification and maintenance program under Parts 121, 123, 127, 135, or an approved inspection program under § 91.217(e), the FAA recognizes that these procedures for maintaining airworthiness of the products have functioned satisfactorily. In this regard, the FAA expects that operating segments of the air transportation industry would continue to work with type certification applicants in defining adequate maintenance instructions prior to type certification. The FAA MRB document, which is a product of contributions made by both the operators and manufacturer, could be picked up by the type design holder and included as a part of the required Instructions for Continued Airworthiness, thus continuing the usefulness of the existing MRB practices for the original entry into service of new product designs. Likewise, the additional maintenance instructions that would be required and which are not typical to MRB documents, but are presently required in air carrier operators' FAA approved maintenance programs, could also be picked up by the type design holder. Therefore, the screening process that would be utilized by the FAA in reviewing such maintenance documents would not unnecessarily delay type certification or approval of design changes after certification. See also the discussion under Proposal 8-3.

A commenter questions the need for the provision in § 21.50(b) requiring that the Airworthiness Limitations section of the Instructions for Continued Airworthiness be furnished with each aircraft, engine, or propeller. The FAA agrees that this provision is unnecessary, as the type certificate holder must make the manual available, and the operator/owner must comply. To require a manual to be furnished with each equipment would be redundant, and in some instances, would be unnecessary. Accordingly, the requirement that the Airworthiness Limitations section be furnished with each airplane or product is revised to require that the section be furnished to each owner of the type.

A commenter objects to § 21.50(b) insofar as it applies to rotorcraft type certificated under Parts 27 and 29, contending that the manufacturer is already required under those parts to furnish a maintenance manual, which has allegedly been proven adequate. The FAA does not agree. The proposed Instructions for Continued Airworthiness, which are broader in scope and more detailed than the maintenance manual currently required under Parts 27 and 29, would provide the operator/owner with the minimum amount of information needed to maintain the airworthiness of increasingly complex rotorcraft currently being designed.

A commenter suggests that § 21.50(b) be revised to make it clear that an aircraft manufacturer need not supply Instructions for Continued Airworthiness pertaining to engines and propellers until the complete aircraft is delivered to the first retail purchaser. The continued airworthiness instructions for propellers and engines should be provided to the aircraft manufacturer to facilitate transmittal to purchasers of the aircraft.

No adverse comment was received on the proposal to replace the word "airplanes" in § 21.35(b)(2) with the word "aircraft" and this amendment to § 21.35(b)(2) is adopted without change.

Proposal 8-5. A commenter objects to the continued airworthiness provisions of § 21.50(b) (and also proposed § 21.31(c)) contending that-(1) continued airworthiness is the responsibility of the operator/owner; (2) current regulations in Parts 23 and 25 already require manufacturers to make available recommended maintenance procedures for the product at the time of its delivery; (3) current operating rules require the operator/owner to establish and comply with a maintenance program; and (4) with respect to transport airplanes, the present FAA Maintenance Review Board (MRB) system is an entirely satisfactory way of establishing the means for maintaining airworthiness. Current FAA practice allows operators of new transport category airplanes to utilize FAA MRB recommendations (reference FAA Advisory Circular No. AC 121-22) for starting their maintenance programs, and then vary them with FAA approval as experience and operating conditions dictate. The commenter points out that, contrary to that practice, the amendment will require the manufacturer to obtain FAA approval of its recommended maintenance procedures before the airplane is type certificated, and to obtain FAA approval of revisions to those procedures (necessitated by any improvement change in the airplane) before approval of the change itself. This, the commenter states, will impose a severe and unnecessary hardship on the manufacturer.

On the first and second points, although the operator/owner does have responsibility for continued airworthiness, the FAA has found that the recommended maintenance procedures made available under current regulations are frequently inadequate in scope and content, and often do not provide a sound basis for the operator/owner to maintain the airworthiness of the aircraft. The FAA has concluded that the lack of such recommended maintenance procedures can best be remedied by requiring that they be made available to owners and operators by the type certificate or supplemental type certificate holder. On the third point, while it is true that not all operators/owners are required to establish and comply with a continuous airworthiness program, those that voluntarily wish to set up such a program are often handicapped by the lack of comprehensive instructions, which would be remedied by § 21.50(b). On the other hand, those required to establish a program will benefit from the more detailed and comprehensive instructions made available to them under § 21.50(b). On the fourth point, which is directed toward aircraft that will be maintained in accordance with an FAA approved operations specification and maintenance program under Parts 121, 123, 127, 135, or an approved inspection program under § 91.217(e), the FAA recognizes that these procedures for maintaining airworthiness of the products have functioned satisfactorily. In this regard, the FAA expects that operating segments of the air transportation industry would continue to work with type certification applicants in defining adequate maintenance instructions prior to type certification. The FAA MRB document, which is a product of contributions made by both the operators and manufacturer, could be picked up by the type design holder and included as a part of the required Instructions for Continued Airworthiness, thus continuing the usefulness of the existing MRB practices for the original entry into service of new product designs. Likewise, the additional maintenance instructions that would be required and which are not typical to MRB documents, but are presently required in air carrier operators' FAA approved maintenance programs, could also be picked up by the type design holder. Therefore, the screening process that would be utilized by the FAA in reviewing such maintenance documents would not unnecessarily delay type certification or approval of design changes after certification. See also the discussion under Proposal 8-3.

A commenter questions the need for the provision in § 21.50(b) requiring that the Airworthiness Limitations section of the Instructions for Continued Airworthiness be furnished with each aircraft, engine, or propeller. The FAA agrees that this provision is unnecessary, as the type certificate holder must make the manual available, and the operator/owner must comply. To require a manual to be furnished with each equipment would be redundant, and in some instances, would be unnecessary. Accordingly, the requirement that the Airworthiness Limitations section be furnished with each airplane or product is revised to require that the section be furnished to each owner of the type.

A commenter objects to § 21.50(b) insofar as it applies to rotorcraft type certificated under Parts 27 and 29, contending that the manufacturer is already required under those parts to furnish a maintenance manual, which has allegedly been proven adequate. The FAA does not agree. The proposed Instructions for Continued Airworthiness, which are broader in scope and more detailed than the maintenance manual currently required under Parts 27 and 29, would provide the operator/owner with the minimum amount of information needed to maintain the airworthiness of increasingly complex rotorcraft currently being designed.

A commenter suggests that § 21.50(b) be revised to make it clear that an aircraft manufacturer need not supply Instructions for Continued Airworthiness pertaining to engines and propellers until the complete aircraft is delivered to the first retail purchaser. The continued airworthiness instructions for propellers and engines should be provided to the aircraft manufacturer to facilitate transmittal to purchasers of the aircraft.

In addition, the commenter suggests that proposed § 21.197(a)(3)(ii) be amended with a reference to the maintenance and inspection programs called for under § 21.195 for Experimental and Subpart C Provisional Type Certificates. Such procedures would unnecessarily complicate the issuance of permits for customer demonstration flights and would in effect nullify the original proposal. The portion of the proposal calling for maintenance and inspection programs in these instances is therefore withdrawn.

Proposal 8-11. No unfavorable comments were received on the proposal to amend § 23.253(b)(3) to ensure that high speed buffeting does not become severe enough to prevent the pilot from reading the instruments or controlling the airplane. Accordingly, the proposal is adopted without substantive change. Also see Proposal 8-28.

Proposal 8-12. No unfavorable comments were received on the proposal to amend § 23.361 to redefine the limit engine torque load conditions to be considered for turbine engine installations and to make other clarifying changes. Accordingly, the proposal is adopted without substantive change.

Proposal 8-13. The FAA does not agree with a commenter who suggests that the lead in of § 23.371 be revised to make the gyroscopic load requirements applicable to piston as well as turbine engines. The FAA has no information to indicate a need for coverage of piston engines in this regulation, nor was any submitted by the commenter.

Another commenter concurs with § 23.371, assuming that a rational analysis of loads under § 23.371(a) is an alternate to the loads specified in § 23.371(b). This assumption is correct. No change to § 23.371 was proposed in this regard. Section 23.371 is adopted without substantive change.

Proposal 8-14. A commenter suggests that the word “operated” in § 23.729(c) be replaced by the word “lowered”. The commenter states that the intent of the rule is to ensure that the gear can be lowered in an emergency. The FAA concurs, but the word “extended” is used to preserve the internal consistency of the section. Section 23.729(c) is revised accordingly.

This commenter also questions whether § 23.729(e) would require an “up lock”. The commenter is evidently referring to a “lock” in the sense of a positive means other than hydraulic pressure, as required to keep the gear extended by § 23.729(b). Section 23.729(e) contains no such requirement.

Another commenter suggests that the second sentence of § 23.729(e) be revised to add the words “and secured” after the words “fully extended” and “fully retracted” in order to clarify what functions the lights would indicate to the pilot. The first sentence of the paragraph clearly states that the indicators should inform the pilot that the gear is secured in the extended or retracted position.

A commenter states that the proposal is redundant since the requirement is already in effect. The FAA does not agree. This is one of several new provisions being incorporated into the current regulations to assure the reliability of small land-plane landing gear systems.

After further review, the FAA has determined that the words “and warning device” should be removed from the heading of § 23.729(e) to preclude confusion between the requirements of this paragraph and those of § 23.729(f). Section 23.729 is adopted with editorial changes and the revisions discussed.

Proposal 8-15. A commenter objects to § 23.903(f) on the grounds that it imposes new and unjustified criteria for restart capability of reciprocating engine powered airplanes. The FAA believes the requirement to be fully justified. Accidents have occurred with multiengine reciprocating powered, as well as turbine powered, airplanes because pilots have not been adequately apprised of the engine restart envelope for their airplane. Therefore, the requirement must apply to both types of engine installations.

This commenter further states that § 23.903(g) is acceptable provided that the “restart requirement is understood to be within the restart envelope for the aircraft (if one is approved for the aircraft).” Present § 23.903(e)(3), as applicable to turbine engine powered small airplanes, states that it must be possible to restart an engine in flight, and § 23.903(f) requires that an approved restart envelope be established. Therefore, development of a restart envelope would be required for the approval of each turbine engine powered small airplane. As adopted, § 23.903(g) requires that, following in-flight shutdown of all engines, electrical power for ignition exists throughout the approved restart envelope.

Another commenter states that it seems inconsistent to require that electrical power be provided for ignition but not for rotational capability sufficient for an engine start. The FAA does not agree. As adopted, the rule provides for those circumstances where engine windmilling speed is sufficient for restarting but insufficient to provide electrical power for ignition.

The proposal is adopted without substantive change. However, § 23.903(f) is revised to make it clear that the specified in-flight engine restart capability is required throughout the required altitude and airspeed envelope.

In addition, the commenter suggests that proposed § 21.197(a)(3)(ii) be amended with a reference to the maintenance and inspection programs called for under § 21.195 for Experimental and Subpart C Provisional Type Certificates. Such procedures would unnecessarily complicate the issuance of permits for customer demonstration flights and would in effect nullify the original proposal. The portion of the proposal calling for maintenance and inspection programs in these instances is therefore withdrawn.

Proposal 8-11. No unfavorable comments were received on the proposal to amend § 23.253(b)(3) to ensure that high speed buffeting does not become severe enough to prevent the pilot from reading the instruments or controlling the airplane. Accordingly, the proposal is adopted without substantive change. Also see Proposal 8-28.

Proposal 8-12. No unfavorable comments were received on the proposal to amend § 23.361 to redefine the limit engine torque load conditions to be considered for turbine engine installations and to make other clarifying changes. Accordingly, the proposal is adopted without substantive change.

Proposal 8-13. The FAA does not agree with a commenter who suggests that the lead in of § 23.371 be revised to make the gyroscopic load requirements applicable to piston as well as turbine engines. The FAA has no information to indicate a need for coverage of piston engines in this regulation, nor was any submitted by the commenter.

Another commenter concurs with § 23.371, assuming that a rational analysis of loads under § 23.371(a) is an alternate to the loads specified in § 23.371(b). This assumption is correct. No change to § 23.371 was proposed in this regard. Section 23.371 is adopted without substantive change.

Proposal 8-14. A commenter suggests that the word “operated” in § 23.729(c) be replaced by the word “lowered”. The commenter states that the intent of the rule is to ensure that the gear can be lowered in an emergency. The FAA concurs, but the word “extended” is used to preserve the internal consistency of the section. Section 23.729(c) is revised accordingly.

This commenter also questions whether § 23.729(e) would require an “up lock”. The commenter is evidently referring to a “lock” in the sense of a positive means other than hydraulic pressure, as required to keep the gear extended by § 23.729(b). Section 23.729(e) contains no such requirement.

Another commenter suggests that the second sentence of § 23.729(e) be revised to add the words “and secured” after the words “fully extended” and “fully retracted” in order to clarify what functions the lights would indicate to the pilot. The first sentence of the paragraph clearly states that the indicators should inform the pilot that the gear is secured in the extended or retracted position.

A commenter states that the proposal is redundant since the requirement is already in effect. The FAA does not agree. This is one of several new provisions being incorporated into the current regulations to assure the reliability of small land-plane landing gear systems.

After further review, the FAA has determined that the words “and warning device” should be removed from the heading of § 23.729(e) to preclude confusion between the requirements of this paragraph and those of § 23.729(f). Section 23.729 is adopted with editorial changes and the revisions discussed.

Proposal 8-15. A commenter objects to § 23.903(f) on the grounds that it imposes new and unjustified criteria for restart capability of reciprocating engine powered airplanes. The FAA believes the requirement to be fully justified. Accidents have occurred with multiengine reciprocating powered, as well as turbine powered, airplanes because pilots have not been adequately apprised of the engine restart envelope for their airplane. Therefore, the requirement must apply to both types of engine installations.

This commenter further states that § 23.903(g) is acceptable provided that the “restart requirement is understood to be within the restart envelope for the aircraft (if one is approved for the aircraft).” Present § 23.903(e)(3), as applicable to turbine engine powered small airplanes, states that it must be possible to restart an engine in flight, and § 23.903(f) requires that an approved restart envelope be established. Therefore, development of a restart envelope would be required for the approval of each turbine engine powered small airplane. As adopted, § 23.903(g) requires that, following in-flight shutdown of all engines, electrical power for ignition exists throughout the approved restart envelope.

Another commenter states that it seems inconsistent to require that electrical power be provided for ignition but not for rotational capability sufficient for an engine start. The FAA does not agree. As adopted, the rule provides for those circumstances where engine windmilling speed is sufficient for restarting but insufficient to provide electrical power for ignition.

The proposal is adopted without substantive change. However, § 23.903(f) is revised to make it clear that the specified in-flight engine restart capability is required throughout the required altitude and airspeed envelope.

in providing the instructions is necessary. The appendix sets forth, in broad objective terms, the kinds of information the Instructions for Continued Airworthiness must contain. Within this framework, the manufacturer would be free to develop detailed instructions appropriate to its aircraft. The FAA is confident that the appendix provides a reasonable measure of flexibility, and anticipates no difficulties or delays in determining the acceptability of the Instructions developed by the manufacturer.

§ XX.1(b). A commenter objects to the requirement that Instructions for Continued Airworthiness be provided for appliances, contending that-(1) this information is often not available from the appliance manufacturer; (2) even when available, the information sometimes has to be revised for the particular application in a manner not approved or intended by the appliance manufacturer; and (3) the information necessary for customized equipment installations would be unreasonably costly to develop. The FAA does not agree. Such information, which is essential to the continued airworthiness of the aircraft, should be provided for each required product. Accordingly, the language of § XX.1(b) is revised to make it clear that if the aircraft manufacturer does not supply continued airworthiness instructions for the product, the Instructions for Continued Airworthiness for the aircraft must include this information. See also the discussion under § XX.3(a)(5)(i).

A commenter objects to the proposal to include information on engines and all appliances in the Instructions for Continued Airworthiness, contending that-(1) such information should be furnished by the engine or appliance manufacturer; and (2) with respect to appliances, only those for which standards have been established by FAA should be covered. On the first point, manufacturers of new engine designs are required to supply the information for their products under new § 33.4. Manufacturers of new aircraft using currently certificated engines are required by § XX.1(b) to provide the information for the engine in their Instructions for Continued Airworthiness for the aircraft. In practice, the FAA expects this information to be developed and supplied by the engine manufacturer. A similar requirement for appliances would be administratively impracticable because of the large number involved. On the second point, it should be noted that specific performance and safety standards have not been established for all essential appliances. However, upon further review, the FAA concludes that it would be unreasonable to require the aircraft manufacturer to cover appliances other than those required in applicable regulations. Accordingly, § XX.1(b), as adopted, refers only to appliances “required by this chapter.”

§ XX.2. A commenter suggests a revision of this section to make clear that the Instructions for Continued Airworthiness may consist of a series of volumes, or may be supplied in other than book form, such as on microfilm or microfiche. The language in § XX.2 is sufficiently broad to cover these acceptable alternatives. Reference to the Air Transportation Association of America Specification No. 100 (where it appeared) is deleted from § XX.2(b) because it is nonregulatory.

§ XX.3, lead-in paragraph. A commenter objects to the requirement that the contents of the manual “be prepared to be understood by the persons who will be responsible for maintaining” the aircraft or product, contending that-(1) it would impose a subjective standard that would be impossible to meet; and (2) it could be interpreted to mean that, in some circumstances, manuals for aircraft to be exported must be prepared in the language of the country of export. In light of these comments, the first sentence of the lead-in paragraph of § XX.3, is revised to read as follows: “The contents of the manual or manuals must be prepared in the English language.” This conveys the intent of the original proposal. A commenter points out that there may be different levels of maintenance instructions, directed at different classes of operators. For example, the maintenance instructions provided to a fleet operator or commuter airline may be more comprehensive than those provided to a fixed base operator. Any level of maintenance instructions considered appropriate by the manufacturer may be submitted, provided that those instructions comply with the minimum standards in the appendix.

§ XX.3(a)(2). A commenter recommends that the requirement for complete descriptions be limited in scope to the “standard” aircraft and “quantity-installed” optional equipment, contending that it would be virtually impossible to devise “custom” maintenance manuals for each product because of the many combinations of equipment that may be ordered by the purchaser. In addition, the commenter states that a manual containing all of these combinations would be difficult to use. The FAA does not agree. To achieve its purpose, the Instructions for Continued Airworthiness must contain information on each item of equipment required by regulation to be installed on the aircraft. The FAA notes that supplemental type certificates (STC’s) are required for installation of equipment not a part of the type certificate, and that this maintenance manual requirement is equally applicable to the STC applicant.

§ XX.3(a)(3). A commenter recommends that since maintenance personnel have no need for the kind of operating information provided in a Pilot’s Operating Handbook, the paragraph be revised to require only basic principles of equipment control and operation. The FAA agrees, and § XX.3(a)(3) now refers to “basic control and operation information.”

§ XX.3(a)(5)(i). A commenter recommends that applicants be allowed to refer to a component manufacturer as a source of information instead of including the information in the Instructions for Continued Airworthiness. The commenter argues that many component manufacturers prefer to maintain control of their maintenance information to ensure that it is up to date. In other cases, maintenance at the factory may be required because of the complexity of the equipment. The FAA recognizes that some accessories, instruments, and equipment have an exceptionally high degree of complexity, requiring specialized maintenance techniques, test equipment, or expertise. In such cases, it would be in the interest of safety to allow the applicant to refer to the appropriate manufacturer in the maintenance instructions. The FAA does not agree, however, that such reference should be allowed in other circumstances. Section XX.3(a)(5)(i) (redesignated § XX.3(b)(1)) is revised accordingly.

A commenter recommends that the last sentence of § XX.3(a)(5)(i), be revised to allow reference to a separate inspection program, rather than include it in the maintenance instructions, so that the inspection program could be better kept current and also tailored to an individual operator's needs. The FAA does not agree. The inspection program must be set forth in the Instructions for Continued Airworthiness to ensure its availability to those who will benefit from it.

The FAA, after further study of § XX.3(a)(5)(i), has decided that the provision should specifically require a description of applicable maintenance or wear tolerances. Section XX.3(a)(5)(i) (redesignated § XX.3(b)(1)) is clarified in this regard.

§ XX.3(a)(5)(ii). A commenter objects to the words "could occur" in this paragraph because it encompasses everything within the realm of possibility, thereby unnecessarily increasing the volume of the maintenance instructions. The phrase "probable malfunctions" replaces the phrase "typical malfunctions that could occur" in § XX.3(a)(5)(ii) (redesignated § XX.3(h)(2)).

§ XX.3(a)(5)(iii). A commenter suggests that this paragraph would be clearer if the first three words and the last five words are deleted. Section XX.3(a)(5)(iii) (redesignated § XX.3(b)(3)) is revised accordingly.

§ XX.3(a)(5)(iv). A commenter suggests revision of this paragraph to make it clear that the overweight landing check refers to the condition in which a certificated landing weight is lower than certificated takeoff weight, since the aircraft manufacturer cannot speculate what damage might be done to an aircraft that takes off and must immediately land at a weight near the certificated takeoff weight. This comment may have merit for certain aircraft. Moreover, since an overweight landing is but one of several occurrences which would necessitate a check to determine aircraft damage, to single out one occurrence would imply that the others need not be covered in the maintenance instructions. Accordingly, the words "checks after an overweight landing" are deleted from § XX.3(a)(5)(iv) (redesignated § XX.3(b)(4)).

§ XX.3(b). A commenter recommends deletion of the requirement for an overhaul manual or section, contending that- (1) there are many products that, for safety reasons, should not to be overhauled; and (2) the manufacturer must make the technical assessment as to whether a product can be safely overhauled. In the light of these comments, and after further consideration, the FAA finds that those portions of § XX.3(b) that provide for overhaul information only (except for engines), should not be required in the Instructions for Continued Airworthiness. Accordingly, §§ XX.3(b)(1)(i), XX.3(b)(1)(ii), XX.3(b)(1)(iv), XX.3(b)(1)(viii), and XX.3(b)(3), are withdrawn. The other provisions of § XX.3(b) specify information that is needed for purposes other than overhaul.

§ XX.3(b)(1)(iii). No adverse comment was received on this proposal to require structural access plate information. Accordingly, it is adopted as proposed, but redesignated § XX.3(c).

§ XX.3(b)(1)(v). No adverse comment was received on this proposal to require instructions on special inspection techniques. Accordingly, it is adopted as proposed, but redesignated § XX.3(d).

§ XX.3(b)(1)(vi). A commenter points out that no part can be restored to its original condition by protective coatings or treatments. The FAA agrees, and § XX.3(b)(1)(vi) (redesignated § XX.3(e)) is revised to make this clear and to require only the information necessary to apply protective treatments to the structure after inspection.

§ XX.3(b)(1)(vii). No adverse comment was received on this proposal to require data on structural fasteners. Accordingly, it is adopted as proposed, but redesignated § XX.3(f).

§ XX.3(b)(1)(ix). No adverse comment was received on the proposal to require a list of special tools. Accordingly, it is adopted as proposed, but redesignated § XX.3(g).

§ XX.3(c). Three commenters object to the concept of supplying generalized repair data. One contended that- (1) the nature of the damage may not be known in a particular case, though it may appear to fall under a general repair "fix"; (2) the safety of the product may be seriously impaired by repairs made in such instances; and (3) the manufacturer can provide alternate means for a mechanic to obtain

§ XX.3(a)(5)(i). A commenter recommends that applicants be allowed to refer to a component manufacturer as a source of information instead of including the information in the Instructions for Continued Airworthiness. The commenter argues that many component manufacturers prefer to maintain control of their maintenance information to ensure that it is up to date. In other cases, maintenance at the factory may be required because of the complexity of the equipment. The FAA recognizes that some accessories, instruments, and equipment have an exceptionally high degree of complexity, requiring specialized maintenance techniques, test equipment, or expertise. In such cases, it would be in the interest of safety to allow the applicant to refer to the appropriate manufacturer in the maintenance instructions. The FAA does not agree, however, that such reference should be allowed in other circumstances. Section XX.3(a)(5)(i) (redesignated § XX.3(b)(1)) is revised accordingly.

A commenter recommends that the last sentence of § XX.3(a)(5)(i), be revised to allow reference to a separate inspection program, rather than include it in the maintenance instructions, so that the inspection program could be better kept current and also tailored to an individual operator's needs. The FAA does not agree. The inspection program must be set forth in the Instructions for Continued Airworthiness to ensure its availability to those who will benefit from it.

The FAA, after further study of § XX.3(a)(5)(i), has decided that the provision should specifically require a description of applicable maintenance or wear tolerances. Section XX.3(a)(5)(i) (redesignated § XX.3(b)(1)) is clarified in this regard.

§ XX.3(a)(5)(ii). A commenter objects to the words "could occur" in this paragraph because it encompasses everything within the realm of possibility, thereby unnecessarily increasing the volume of the maintenance instructions. The phrase "probable malfunctions" replaces the phrase "typical malfunctions that could occur" in § XX.3(a)(5)(ii) (redesignated § XX.3(h)(2)).

§ XX.3(a)(5)(iii). A commenter suggests that this paragraph would be clearer if the first three words and the last five words are deleted. Section XX.3(a)(5)(iii) (redesignated § XX.3(b)(3)) is revised accordingly.

§ XX.3(a)(5)(iv). A commenter suggests revision of this paragraph to make it clear that the overweight landing check refers to the condition in which a certificated landing weight is lower than certificated takeoff weight, since the aircraft manufacturer cannot speculate what damage might be done to an aircraft that takes off and must immediately land at a weight near the certificated takeoff weight. This comment may have merit for certain aircraft. Moreover, since an overweight landing is but one of several occurrences which would necessitate a check to determine aircraft damage, to single out one occurrence would imply that the others need not be covered in the maintenance instructions. Accordingly, the words "checks after an overweight landing" are deleted from § XX.3(a)(5)(iv) (redesignated § XX.3(b)(4)).

§ XX.3(b). A commenter recommends deletion of the requirement for an overhaul manual or section, contending that- (1) there are many products that, for safety reasons, should not to be overhauled; and (2) the manufacturer must make the technical assessment as to whether a product can be safely overhauled. In the light of these comments, and after further consideration, the FAA finds that those portions of § XX.3(b) that provide for overhaul information only (except for engines), should not be required in the Instructions for Continued Airworthiness. Accordingly, §§ XX.3(b)(1)(i), XX.3(b)(1)(ii), XX.3(b)(1)(iv), XX.3(b)(1)(viii), and XX.3(b)(3), are withdrawn. The other provisions of § XX.3(b) specify information that is needed for purposes other than overhaul.

§ XX.3(b)(1)(iii). No adverse comment was received on this proposal to require structural access plate information. Accordingly, it is adopted as proposed, but redesignated § XX.3(c).

§ XX.3(b)(1)(v). No adverse comment was received on this proposal to require instructions on special inspection techniques. Accordingly, it is adopted as proposed, but redesignated § XX.3(d).

§ XX.3(b)(1)(vi). A commenter points out that no part can be restored to its original condition by protective coatings or treatments. The FAA agrees, and § XX.3(b)(1)(vi) (redesignated § XX.3(e)) is revised to make this clear and to require only the information necessary to apply protective treatments to the structure after inspection.

§ XX.3(b)(1)(vii). No adverse comment was received on this proposal to require data on structural fasteners. Accordingly, it is adopted as proposed, but redesignated § XX.3(f).

§ XX.3(b)(1)(ix). No adverse comment was received on the proposal to require a list of special tools. Accordingly, it is adopted as proposed, but redesignated § XX.3(g).

§ XX.3(c). Three commenters object to the concept of supplying generalized repair data. One contended that-(1) the nature of the damage may not be known in a particular case, though it may appear to fall under a general repair "fix"; (2) the safety of the product may be seriously impaired by repairs made in such instances; and (3) the manufacturer can provide alternate means for a mechanic to obtain

differ from conventional structure. The FAA agrees that to conduct ultimate load tests for all critical load conditions would greatly increase the amount of testing required, which is not warranted by the safety record since there have been no service features which indicate that present methods of substantiation are inadequate. In many cases failures in service result from conditions such as fatigue or corrosion which are not covered by ultimate load tests. The proposal to require ultimate testing of all structural components therefore is deleted. In some cases, however, analysis must be supplemented by limit and/or ultimate load tests. The amendment, as adopted, is revised accordingly.

Proposal 8-90. Several negative comments were received on §§ 25.365(e) and (f), requiring airplane designers to consider pressure vessel decompression resulting from the loss of any nonplug door, detonation of a bomb within the cabin at all probable locations, and engine disintegration. Several commenters oppose designing for the loss of a nonplug door, stating that there is no reason why nonplug doors cannot be designed to be as safe as plug doors. These commenters suggest that the door design criteria be upgraded to improve door integrity. The FAA agrees that door integrity should be improved to the extent that design for their loss is not justified. Therefore § 25.783 is revised in response to Proposal 8-35 to require this improved level and § 25.365(e)(1) is withdrawn.

Many commenters object to designing for all possible bomb detonations and probable bomb locations. A commenter points out that airworthiness requirements in the past have attempted to safeguard aircraft against structural and mechanical failure, human error, natural hazards, etc. They note that no one has attempted to incorporate into airworthiness requirements the consequences of homicidal or suicidal tendencies. Another commenter states that the aircraft industry has to accept responsibility for compensating the public for loss or injuries resulting from defects in its products, and the inclusion of a bomb damage requirement in Part 25 could significantly extend the grounds of possible product liability actions, particularly with the imprecise requirements of § 25.365(e). Many commenters state that the wording of § 25.365(e)(3) is so vague as to make its implementation impossible. The FAA notes that, ultimately, minimizing the loss of airplanes as a result of bomb explosions is a ground security problem.

A commenter suggests an alternative to § 25.365(e)(3) which would establish a relationship between the design maximum opening and the cross-sectional area of the pressurized shell. The FAA agrees that the proposed relationship provides an acceptable method for determining hole size. The FAA has determined that the maximum hole size required should be 20 square feet, a value contained in Airworthiness Directive 75-15-05 (August 11, 1975) pertaining to openings in wide-body transports. Section 25.365(e)(3) is revised to allow the maximum opening to vary as a function of the cross-sectional area of the pressurized shell to account for the differences in size between narrow and wide-body transports and is redesignated and adopted as § 25.365(e)(2).

The FAA finds that the maximum opening specified in adopted § 25.365(e)(2) will exceed the opening that would result from causes other than bomb explosions or engine disintegration, and that a probability safety analysis to determine hole size in passenger or cargo areas resulting from other causes is not needed. Thus, proposed § 25.365(f) is withdrawn.

In light of the comments received on proposed § 25.365(e)(4), and after further consideration, the FAA concludes that openings caused by airplane or equipment failure can occur in any compartment, and that partitions, bulkheads, and floors should be designed for openings from these causes. Thus, proposed § 25.365(e)(4) is revised accordingly, redesignated, and adopted as § 25.365(e)(3).

No adverse comments were received on proposed § 25.365(e)(2) to require design to withstand penetration of the cabin by a portion of an engine following engine disintegration and the proposal is redesignated § 25.365(e)(1) and adopted without substantive change.

Amendment to § 25.571(a)(3). Because of the change to § 25.1529 adopted in this amendment, the reference to the "maintenance manual" in § 25.571(a)(3) is no longer appropriate. For consistency, § 25.571(a)(3) references the Airworthiness Limitations section of the Instructions for Continued Airworthiness.

Proposal 8-31. Numerous unfavorable comments were received on the proposal to add a new § 25.633 requiring that essential systems be designed to minimize damage caused by detonation of a bomb in the airplane. Most commenters contend that there is no means to protect essential systems from all possible bomb detonations and that bomb size and location cannot be rationally defined. Several commenters indicate that the separation of essential systems on modern airplanes presently provides a measure of protection and that the proposed requirements of § 25.633 are beyond the state of the art.

The FAA agrees that a rational means of determining and defining all possible bomb size/location combinations which would damage essential systems does not exist. Therefore, the proposal is withdrawn.

Proposal 8-32. Several commenters object to the proposed horizontal stabilizer “trim in-motion” aural warning requirement of § 25.677(e) on the grounds that the aural environment in today’s cockpits is already cluttered and that finding new and distinctive aural warnings is becoming difficult. They further suggest that small increments of trim change should not cause aural warning, and that warnings should be given only when a safety-of-flight hazard exists. One commenter suggests that there is no need for separate aural warning on aircraft having direct trim control wheels in the cockpit.

The FAA agrees with the comments and upon further review concludes that the proposal is premature and unworkable. Accordingly, it is withdrawn for further study.

Proposal 8-33. Several adverse and supporting comments were received on the proposal to add a new § 25.685(e) requiring arrangement of control systems to provide an airplane with the capability of continued safe flight and landing in the event of an inflight localized structural failure. Several commenters agree with the intent of the proposal and propose minor changes. One commenter agrees with the intent of the proposal, but believes that only failures which have not been shown to be extremely improbable need be considered. Commenters state that the intent of the proposed rule change is already encompassed by § 25.365(e) which would require that floor failure resulting from rapid decompression be shown to be extremely improbable.

A commenter further states that present § 25.671(c) requires control systems to be designed to be tolerant of failures, and that control system damage is more likely from other sources. The commenter claims that service experience and rational analysis show that the floor structure provides the best available protection for the control system from damage from these other sources.

After further study the FAA agrees with the commenters that the primary objectives of this proposal are adequately covered by several existing sections of FAR 25. For example: § 25.365(e) requires that the floor be designed for pressure vessel opening which is a function of the cross-sectional area of the fuselage; § 25.571 requires all structure to be damage tolerant where practical; § 25.671 requires that control systems be tolerant of failures, including exterior damage; § 25.629 requires freedom from flutter under failure conditions; § 25.631 requires protection of controls in the empennage structure from bird strikes; and § 25.901(d) requires design precautions be taken to minimize the hazards to the airplane, including control systems, in the event of an engine rotor failure. The proposal therefore is withdrawn.

Proposal 8-34. For an explanation of the withdrawal of the proposals concerning automatic systems that affect airplane performance, one of which is the proposal to add a new § 25.705, see Proposal 8-26.

Proposal 8-35 and 2-59. Several commenters object to the requirement in § 25.783(e) that provisions for the inspection of door locking mechanisms must be discernable under all possible lighting conditions. The commenters state that allowance should be made for use of supplemental lighting such as a flashlight to aid in the inspection. The FAA agrees and the section is revised accordingly.

A commenter states that direct visual inspection is only needed for external doors for which the initial opening movement is not inward and which are pressurized or for which an inadvertent opening could prevent continued safe flight and landing. Although these comments have merit, they go beyond the scope of Proposal 8-35 and interested parties have not had an opportunity to comment on these changes. No change to the section is being made based on these comments. Several commenters object to the redundancy of a dual warning system requirement and state that in lieu of redundancy, a reliability level should be specified. Further comments state that all external doors do not require this level of reliability. The FAA agrees that this reliability level could be specified and should apply only to external doors for which initial movement is not inward, and the section is changed accordingly. The present language defining where door warning systems are required is retained, as no change in present practice is intended.

A commenter suggests that § 25.783(e) should specify several good design practices. These design practices are desirable but are not essential, since the necessary level of safety can be obtained by alternate means under § 25.783.

Several commenters object to new § 25.783(f), suggesting that it apply only to nonplug type doors and doors whose loss would present a probable hazard. The FAA agrees that provisions to prevent unsafe pressurization can be limited to doors whose loss would present a probable hazard. However, the FAA does not agree that it should be limited to nonplug type doors because a plug door is defined as one whose initial opening is inward and this feature does not necessarily provide complete assurance that an unsafe pressurization will not occur with subsequent opening of the door in flight. The clarifying phrase “to an unsafe level” has been added to § 25.783(f). The intent is to prevent pressurization to a level which would be hazardous if an unlocked external door inadvertently opened.

Proposal 8-32. Several commenters object to the proposed horizontal stabilizer “trim in-motion” aural warning requirement of § 25.677(e) on the grounds that the aural environment in today’s cockpits is already cluttered and that finding new and distinctive aural warnings is becoming difficult. They further suggest that small increments of trim change should not cause aural warning, and that warnings should be given only when a safety-of-flight hazard exists. One commenter suggests that there is no need for separate aural warning on aircraft having direct trim control wheels in the cockpit.

The FAA agrees with the comments and upon further review concludes that the proposal is premature and unworkable. Accordingly, it is withdrawn for further study.

Proposal 8-33. Several adverse and supporting comments were received on the proposal to add a new § 25.685(e) requiring arrangement of control systems to provide an airplane with the capability of continued safe flight and landing in the event of an inflight localized structural failure. Several commenters agree with the intent of the proposal and propose minor changes. One commenter agrees with the intent of the proposal, but believes that only failures which have not been shown to be extremely improbable need be considered. Commenters state that the intent of the proposed rule change is already encompassed by § 25.365(e) which would require that floor failure resulting from rapid decompression be shown to be extremely improbable.

A commenter further states that present § 25.671(c) requires control systems to be designed to be tolerant of failures, and that control system damage is more likely from other sources. The commenter claims that service experience and rational analysis show that the floor structure provides the best available protection for the control system from damage from these other sources.

After further study the FAA agrees with the commenters that the primary objectives of this proposal are adequately covered by several existing sections of FAR 25. For example: § 25.365(e) requires that the floor be designed for pressure vessel opening which is a function of the cross-sectional area of the fuselage; § 25.571 requires all structure to be damage tolerant where practical; § 25.671 requires that control systems be tolerant of failures, including exterior damage; § 25.629 requires freedom from flutter under failure conditions; § 25.631 requires protection of controls in the empennage structure from bird strikes; and § 25.901(d) requires design precautions be taken to minimize the hazards to the airplane, including control systems, in the event of an engine rotor failure. The proposal therefore is withdrawn.

Proposal 8-34. For an explanation of the withdrawal of the proposals concerning automatic systems that affect airplane performance, one of which is the proposal to add a new § 25.705, see Proposal 8-26.

Proposal 8-35 and 2-59. Several commenters object to the requirement in § 25.783(e) that provisions for the inspection of door locking mechanisms must be discernable under all possible lighting conditions. The commenters state that allowance should be made for use of supplemental lighting such as a flashlight to aid in the inspection. The FAA agrees and the section is revised accordingly.

A commenter states that direct visual inspection is only needed for external doors for which the initial opening movement is not inward and which are pressurized or for which an inadvertent opening could prevent continued safe flight and landing. Although these comments have merit, they go beyond the scope of Proposal 8-35 and interested parties have not had an opportunity to comment on these changes. No change to the section is being made based on these comments. Several commenters object to the redundancy of a dual warning system requirement and state that in lieu of redundancy, a reliability level should be specified. Further comments state that all external doors do not require this level of reliability. The FAA agrees that this reliability level could be specified and should apply only to external doors for which initial movement is not inward, and the section is changed accordingly. The present language defining where door warning systems are required is retained, as no change in present practice is intended.

A commenter suggests that § 25.783(e) should specify several good design practices. These design practices are desirable but are not essential, since the necessary level of safety can be obtained by alternate means under § 25.783.

Several commenters object to new § 25.783(f), suggesting that it apply only to nonplug type doors and doors whose loss would present a probable hazard. The FAA agrees that provisions to prevent unsafe pressurization can be limited to doors whose loss would present a probable hazard. However, the FAA does not agree that it should be limited to nonplug type doors because a plug door is defined as one whose initial opening is inward and this feature does not necessarily provide complete assurance that an unsafe pressurization will not occur with subsequent opening of the door in flight. The clarifying phrase “to an unsafe level” has been added to § 25.783(f). The intent is to prevent pressurization to a level which would be hazardous if an unlocked external door inadvertently opened.

Proposal 8-103. The proposal to add a new § 25.905(c) is adopted without substantive change.

Proposals 8-45 and 8-96. The proposed amendments to §§ 25.939 and 33.65 are being deferred for consideration in a forthcoming notice of proposed rule making of the Aircraft Engine Regulatory Review Program.

Proposals 8-46, 3-35, and 8-47. Final action on Proposals 8-46, 3-35, and 8-47 was taken in Airworthiness Review Program, Amendment No. 7: Airframe Amendments (43 FR 50578; Oct. 30, 1978).

Proposal 8-48. For an explanation of the withdrawal of the proposals concerning automatic takeoff thrust control systems, one of which is the proposal to add a new § 25.1143(f), see Proposal 8-26.

Proposals 8-49 and 9-41. Final action on Proposals 8-49 and 3-41 was taken in Airworthiness Review Program, Amendment No. 7: Airframe Amendments (43 FR 50578; Oct. 30, 1978).

Proposal 8-50. For an explanation of withdrawal of the proposals concerning automatic takeoff thrust control systems, one of which is the addition of a new § 25.1305(c)(9), see Proposal 8-26.

One commenter objects to revising § 25.1305(d)(1), stating that significant aerodynamic forces acting on the powerplant nacelle make the direct measurement of thrust impractical. The FAA agrees that such forces may be significant. This commenter further objects to the revision, stating that it is beyond the state of the art to prohibit a parameter from being used if the accuracy of the indication will be adversely affected by any engine malfunction or damage. The FAA agrees that precise values of thrust provided by a malfunctioning, damaged, or deteriorated engine are unnecessary, provided that any changes in thrust due to engine malfunction, damage, or deterioration are indicated to the pilot. The paragraph is revised to require that the indication must be based on the direct measurement of thrust or of parameters that are directly related to thrust.

Although concurring with § 25.1305(d)(1), one commenter states that he would prefer to retain the existing requirements and delete the words “, or to indicate a gas stream pressure that can be related to thrust,“. The FAA does not agree. The change suggested by this commenter would eliminate the requirement for thrust information and would retain the requirement for change-of-thrust information only. It also would provide a lower level of safety than the adopted paragraph.

This commenter also states that § 25.1305(d)(1) should be complementary to a similar requirement in Part 33 of this chapter. The FAA does not agree. In current practice, the airframe manufacturer determines how performance should be met. The choice of a means to indicate thrust is negotiated between the airplane manufacturer and the engine manufacturer. The factors which influence the final choice are substantial and may vary among airplane designs. These factors may not be known to the engine manufacturer at the time of engine type certification. Another commenter states that the need for an actual value of thrust is not obvious, whereas indication of a loss of thrust would satisfy the original proposal. The FAA agrees that the actual value of thrust is of little value to the pilot. Section 25.1305(d)(1) is revised to specify that the indicator indicate thrust, or a parameter related to thrust, to the pilot.

Proposal 8-51. No unfavorable comments were received on the proposal to change the reference in § 25.1307(b) for fire extinguishers in connection with Proposal 8-41. Accordingly, the proposal is adopted without substantive change.

Proposal 8-52. Final action on Proposal 8-52 was taken in Airworthiness Review Program, Amendment No. 8: Cabin Safety and Flight Attendant Amendments (45 FR 7750; February 4, 1980).

Proposal 8-53. Several commenters point out a number of service deficiencies with proposed § 25.1421 which defines the requirements for cargo compartment fire detection systems. They contend that the requirement for the detection system to actuate a warning within one minute of the start of a fire is too restrictive. One commenter cites the results of FAA tests which show average fire detection times to be from 1.75 to 5 minutes. The commenters also suggest that the tests necessary to show compliance with the warning requirements are not clearly defined. Finally, one commenter points out that fires in baggage containers and other enclosed containers can burn for a considerable time before detection is likely by fire detectors in the cargo compartment.

The FAA does not concur that the one-minute requirement is too restrictive. A survey of fire detection technology has indicated that the state of the art permits detection of a fire in less than one minute after inception. In addition, current standards do not define the test procedures necessary to show compliance with warning requirements. The new one-minute requirement is intended to improve the standards in this regard.

The proposal is adopted without substantive change.

Proposal 8-103. The proposal to add a new § 25.905(c) is adopted without substantive change.

Proposals 8-45 and 8-96. The proposed amendments to §§ 25.939 and 33.65 are being deferred for consideration in a forthcoming notice of proposed rule making of the Aircraft Engine Regulatory Review Program.

Proposals 8-46, 3-35, and 8-47. Final action on Proposals 8-46, 3-35, and 8-47 was taken in Airworthiness Review Program, Amendment No. 7: Airframe Amendments (43 FR 50578; Oct. 30, 1978).

Proposal 8-48. For an explanation of the withdrawal of the proposals concerning automatic takeoff thrust control systems, one of which is the proposal to add a new § 25.1143(f), see Proposal 8-26.

Proposals 8-49 and 9-41. Final action on Proposals 8-49 and 3-41 was taken in Airworthiness Review Program, Amendment No. 7: Airframe Amendments (43 FR 50578; Oct. 30, 1978).

Proposal 8-50. For an explanation of withdrawal of the proposals concerning automatic takeoff thrust control systems, one of which is the addition of a new § 25.1305(c)(9), see Proposal 8-26.

One commenter objects to revising § 25.1305(d)(1), stating that significant aerodynamic forces acting on the powerplant nacelle make the direct measurement of thrust impractical. The FAA agrees that such forces may be significant. This commenter further objects to the revision, stating that it is beyond the state of the art to prohibit a parameter from being used if the accuracy of the indication will be adversely affected by any engine malfunction or damage. The FAA agrees that precise values of thrust provided by a malfunctioning, damaged, or deteriorated engine are unnecessary, provided that any changes in thrust due to engine malfunction, damage, or deterioration are indicated to the pilot. The paragraph is revised to require that the indication must be based on the direct measurement of thrust or of parameters that are directly related to thrust.

Although concurring with § 25.1305(d)(1), one commenter states that he would prefer to retain the existing requirements and delete the words “, or to indicate a gas stream pressure that can be related to thrust,“. The FAA does not agree. The change suggested by this commenter would eliminate the requirement for thrust information and would retain the requirement for change-of-thrust information only. It also would provide a lower level of safety than the adopted paragraph.

This commenter also states that § 25.1305(d)(1) should be complementary to a similar requirement in Part 33 of this chapter. The FAA does not agree. In current practice, the airframe manufacturer determines how performance should be met. The choice of a means to indicate thrust is negotiated between the airplane manufacturer and the engine manufacturer. The factors which influence the final choice are substantial and may vary among airplane designs. These factors may not be known to the engine manufacturer at the time of engine type certification. Another commenter states that the need for an actual value of thrust is not obvious, whereas indication of a loss of thrust would satisfy the original proposal. The FAA agrees that the actual value of thrust is of little value to the pilot. Section 25.1305(d)(1) is revised to specify that the indicator indicate thrust, or a parameter related to thrust, to the pilot.

Proposal 8-51. No unfavorable comments were received on the proposal to change the reference in § 25.1307(b) for fire extinguishers in connection with Proposal 8-41. Accordingly, the proposal is adopted without substantive change.

Proposal 8-52. Final action on Proposal 8-52 was taken in Airworthiness Review Program, Amendment No. 8: Cabin Safety and Flight Attendant Amendments (45 FR 7750; February 4, 1980).

Proposal 8-53. Several commenters point out a number of service deficiencies with proposed § 25.1421 which defines the requirements for cargo compartment fire detection systems. They contend that the requirement for the detection system to actuate a warning within one minute of the start of a fire is too restrictive. One commenter cites the results of FAA tests which show average fire detection times to be from 1.75 to 5 minutes. The commenters also suggest that the tests necessary to show compliance with the warning requirements are not clearly defined. Finally, one commenter points out that fires in baggage containers and other enclosed containers can burn for a considerable time before detection is likely by fire detectors in the cargo compartment.

The FAA does not concur that the one-minute requirement is too restrictive. A survey of fire detection technology has indicated that the state of the art permits detection of a fire in less than one minute after inception. In addition, current standards do not define the test procedures necessary to show compliance with warning requirements. The new one-minute requirement is intended to improve the standards in this regard.

The proposal is adopted without substantive change.

at 80,000 ft., provided the new design is comparable to a similar design with extensive satisfactory service experience. These criteria, which have been under discussion between FAA and industry for over 10 years, are proposed as new rules rather than acceptable means of complying with existing rules. Paragraph (b)(3)(i) is revised accordingly. The commenter also recommends that paragraph (d)(1) be revised to require a gust intensity of $U_0=60$ fps on the interval 0 to 20,000 ft. altitude and be linearly decreased to 23 fps at 80,000 ft. altitude. The FAA disagrees. The gust intensities in paragraph (d)(1) are based on the distribution of gust intensity with altitude which were developed in the basic research for the development of continuous turbulence criteria and are, therefore, considered reasonable as a lower design envelope limit for mission analysis. A cost analysis was provided by the commenter to justify the lower gust intensities, but the FAA finds that this cost analysis was based on "design envelope analysis" alone. Paragraph (c), which is an alternative to paragraph (b), provides for a "mission analysis". Actual experience has shown that "mission analysis," which considers airplane operational characteristics, has been used in the past in lieu of the 85 fps intensities to prevent weight and cost penalties. Paragraphs (c) and (d) of Appendix G are adopted without substantive change.

A commenter recommends that paragraph (d) of Appendix G be revised to delete the reference to "fail-safe loads" since such loads are not provided in Appendix C. The FAA agrees. Paragraph (d) of Appendix G is revised accordingly.

A commenter recommends that proposed paragraph (e) of Appendix G be deleted since acceleration levels measured at the pilot station on current conventional aircraft can be established by flight demonstration much more easily and with less cost than by use of an expensive analysis considering response to continuous turbulence. Upon further review, the FAA has determined that it lacks sufficient information to specify the right combination of analysis and flight test to determine the acceleration levels at the pilot's station during continuous turbulence. Accordingly, proposed paragraph (e) of Appendix G is withdrawn. The current requirements related to operation in turbulence are adequate to determine the response at the pilot's station during continuous turbulence.

Proposal 8-62. For comments related to the proposal to add a new Appendix G to Part 25, see Proposal 8-25. Appendix G (redesignated Appendix H) to Part 25 is adopted with the changes discussed in Proposal 8-25.

Proposal 8-68. Final action on Proposal 8-63 was taken in Airworthiness Review Program, Amendment No. 7: Airframe Amendments (43 FR 50578; October 30, 1978).

Amendment to § 27.571. Because of the change to § 25.1529 adopted in this amendment, the reference to § 27.1529(a)(2) in §§ 27.571(b), (c), (d)(1), (d)(3), and (e) is no longer appropriate. The reference is changed to "§ A27.4 of Appendix A". This discrepancy was overlooked in Notice 75-31 (40 FR 29410; July 11, 1975). Since this amendment is clarifying in nature and does not impose a burden on the public, notice and public procedure are unnecessary and good cause exists for adopting this amendment.

Proposal 8-64. For comments related to the proposal to amend § 27.1529, see Proposal 8-21.

Proposals 8-65 and 8-66. Final action on Proposals 8-65 and 8-66 was taken in Airworthiness Review Program, Amendment No. 7: Airframe Amendments (43 FR 50578; October 30, 1978).

Proposal 8-67. For comments related to the proposal to add a new Appendix A to Part 27, see Proposal 8-25. Additional comments on this proposal, and on the proposal to add a new Appendix A to Part 29, are discussed here.

A commenter suggests that the wording of Appendix A be adjusted to take into account the differences between airplanes and rotorcraft. The FAA agrees. The appendix, as proposed, is generally equally applicable to airplanes and rotorcraft. However, several minor changes have been made to the appendix to provide for rotorcraft differences, primarily to cover rotors and differing fatigue standards.

A commenter objects to Appendix A, contending that: (1) The standards in current §§ 27.1529 and 29.1529 have been adequate in service, and (2) the proposal is excessive in scope and would create an undue burden. The FAA does not agree, having found that recommended maintenance procedures made available to operators/owners in the past were frequently inadequate in scope and content, providing no sound basis for maintaining the airworthiness of the rotorcraft. Appendix A, with the revisions and deletions discussed above and under Proposal 8-25, would not create an undue burden on the type certificate applicant.

One commenter expresses concern that certain inspection provisions in current § 91.217 might be applied to rotorcraft. The appendix contains no such requirement. Current § 91.217 applies only to certain airplanes.

at 80,000 ft., provided the new design is comparable to a similar design with extensive satisfactory service experience. These criteria, which have been under discussion between FAA and industry for over 10 years, are proposed as new rules rather than acceptable means of complying with existing rules. Paragraph (b)(3)(i) is revised accordingly. The commenter also recommends that paragraph (d)(1) be revised to require a gust intensity of $U_0=60$ fps on the interval 0 to 20,000 ft. altitude and be linearly decreased to 23 fps at 80,000 ft. altitude. The FAA disagrees. The gust intensities in paragraph (d)(1) are based on the distribution of gust intensity with altitude which were developed in the basic research for the development of continuous turbulence criteria and are, therefore, considered reasonable as a lower design envelope limit for mission analysis. A cost analysis was provided by the commenter to justify the lower gust intensities, but the FAA finds that this cost analysis was based on "design envelope analysis" alone. Paragraph (c), which is an alternative to paragraph (b), provides for a "mission analysis". Actual experience has shown that "mission analysis," which considers airplane operational characteristics, has been used in the past in lieu of the 85 fps intensities to prevent weight and cost penalties. Paragraphs (c) and (d) of Appendix G are adopted without substantive change.

A commenter recommends that paragraph (d) of Appendix G be revised to delete the reference to "fail-safe loads" since such loads are not provided in Appendix C. The FAA agrees. Paragraph (d) of Appendix G is revised accordingly.

A commenter recommends that proposed paragraph (e) of Appendix G be deleted since acceleration levels measured at the pilot station on current conventional aircraft can be established by flight demonstration much more easily and with less cost than by use of an expensive analysis considering response to continuous turbulence. Upon further review, the FAA has determined that it lacks sufficient information to specify the right combination of analysis and flight test to determine the acceleration levels at the pilot's station during continuous turbulence. Accordingly, proposed paragraph (e) of Appendix G is withdrawn. The current requirements related to operation in turbulence are adequate to determine the response at the pilot's station during continuous turbulence.

Proposal 8-62. For comments related to the proposal to add a new Appendix G to Part 25, see Proposal 8-25. Appendix G (redesignated Appendix H) to Part 25 is adopted with the changes discussed in Proposal 8-25.

Proposal 8-68. Final action on Proposal 8-63 was taken in Airworthiness Review Program, Amendment No. 7: Airframe Amendments (43 FR 50578; October 30, 1978).

Amendment to § 27.571. Because of the change to § 25.1529 adopted in this amendment, the reference to § 27.1529(a)(2) in §§ 27.571(b), (c), (d)(1), (d)(3), and (e) is no longer appropriate. The reference is changed to "§ A27.4 of Appendix A". This discrepancy was overlooked in Notice 75-31 (40 FR 29410; July 11, 1975). Since this amendment is clarifying in nature and does not impose a burden on the public, notice and public procedure are unnecessary and good cause exists for adopting this amendment.

Proposal 8-64. For comments related to the proposal to amend § 27.1529, see Proposal 8-21.

Proposals 8-65 and 8-66. Final action on Proposals 8-65 and 8-66 was taken in Airworthiness Review Program, Amendment No. 7: Airframe Amendments (43 FR 50578; October 30, 1978).

Proposal 8-67. For comments related to the proposal to add a new Appendix A to Part 27, see Proposal 8-25. Additional comments on this proposal, and on the proposal to add a new Appendix A to Part 29, are discussed here.

A commenter suggests that the wording of Appendix A be adjusted to take into account the differences between airplanes and rotorcraft. The FAA agrees. The appendix, as proposed, is generally equally applicable to airplanes and rotorcraft. However, several minor changes have been made to the appendix to provide for rotorcraft differences, primarily to cover rotors and differing fatigue standards.

A commenter objects to Appendix A, contending that: (1) The standards in current §§ 27.1529 and 29.1529 have been adequate in service, and (2) the proposal is excessive in scope and would create an undue burden. The FAA does not agree, having found that recommended maintenance procedures made available to operators/owners in the past were frequently inadequate in scope and content, providing no sound basis for maintaining the airworthiness of the rotorcraft. Appendix A, with the revisions and deletions discussed above and under Proposal 8-25, would not create an undue burden on the type certificate applicant.

One commenter expresses concern that certain inspection provisions in current § 91.217 might be applied to rotorcraft. The appendix contains no such requirement. Current § 91.217 applies only to certain airplanes.

Proposal 8-88. No unfavorable comments were received on the proposal to amend § 31.81 to detail operating limitations and information. The FAA notes, however, that proposed § 31.81(b) is not clear as to which “operating limitations and other information necessary for safe operation” must be furnished. The FAA’s intent, as stated in the explanation, is to require that the information established under § 31.81(a) be furnished. Section 31.81(b) is revised accordingly. Section 31.81(a) is adopted without substantive change.

Proposal 8-89. A commenter is concerned that proposed § 31.82 might require balloon manufacturers to prepare two overlapping maintenance documents—the maintenance manual currently supplied to operators/owners, and the proposed Instructions for Continued Airworthiness. The FAA notes that under §§ 31.82 and 21.50(b), balloon manufacturers would be required to prepare and furnish only the Instructions for Continued Airworthiness.

The FAA notes further (as discussed under Proposal 8-21) that the Instructions for Continued Airworthiness need not be finalized until delivery of the first balloon, while § 31.82, as proposed, could be interpreted to require that they be finalized before type certification. This point is clarified in § 31.82, as adopted, consistent with the corresponding requirement in Parts 23, 25, 27, and 29.

Proposal 8-90. No unfavorable comments were received on the proposal to amend § 31.85(b)(1). However, a commenter questions whether percentage figures on the required fuel quantity gauge would be acceptable. The FAA has determined that, in the particular case of balloons (for which the fuel quantity information is to an extent less important to safety than for other classes of aircraft), calibration of the fuel quantity gauge in percent of fuel cell capacity is an acceptable means of complying with the last sentence of § 31.85(h)(1). Section 31.85(b)(1), as adopted, is revised to make this clear.

Proposal 8-91. No adverse comments were received on the proposal to add a new Appendix A to Part 31. However, comments received on the proposals to add a similar appendix to Parts 23, 25, 27, and 29 (Proposal 8-25), were equally valid with respect to this proposal. Accordingly, Appendix A to Part 31, as adopted, is revised in substance as applicable.

Regarding the proposals to require generalized repair data in the Instructions for Continued Airworthiness, it is more appropriate, as well as necessary and practicable, to include specific instructions for repair of the key elements of a balloon—the balloon envelope and its basket or trapeze. This information is incorporated in paragraph A31.3(i) as revised.

Proposal 8-92. A commenter objects to § 33.4 insofar as it would require completion of the Instructions for Continued Airworthiness before the type certificate is issued, contending that a significant portion of the data and other material called for is typically not compiled until 6 months or longer after type certification. The commenter suggests that manufacturers be allowed to prepare and make available the Instructions for Continued Airworthiness before the first aircraft equipped with the subject engine is put into service, which, it claims, is the earliest such instructions would be needed. Requiring the engine manufacturer to complete the Instructions for Continued Airworthiness before the type certificate is issued would constitute an unnecessary burden. However, the FAA considers that they must be made available, and furnished, upon delivery of the first engine on an aircraft or issuance of a standard certificate of airworthiness for the aircraft, whichever occurs later. This would be consistent with corresponding requirements proposed for other products. See Proposals 8-5 and 8-21. Section 33.4 is revised and adopted accordingly.

Proposal 8-93. A commenter observes that § 33.5 requires that the instruction manual for installing and operating the engine be “approved,” whereas proposed § 33.4 requires that the Instructions for Continued Airworthiness be “acceptable to the Administrator,” and recommends that the latter term be used for consistency. The FAA notes that the term “acceptable to the Administrator” is widely used in Part 43 in connection with maintenance requirements, whereas the term “approved” is more frequently used in FAR Parts containing installation and operating requirements. Considering the FAR as a whole, the FAA does not agree that such consistency is essential. Accordingly, § 33.5 is adopted as proposed.

Proposal 8-94. Several commenters object to proposed §§ 33.6(e) and (f), and to proposed §§ 23.1521(a) and 25.1521(a) (Proposals 8-20 and 8-56, respectively) on the grounds that the use of rated takeoff power or thrust for 10 minutes with one engine inoperative should not be limited to “the extent that the utilization is necessary for the airplane to avoid, without necessitating turning maneuvers, obstacles beneath the flight path intended for the airplane prior to the loss of the engine.” In light of these comments and after further review, the FAA concludes that these proposals are premature and they are withdrawn.

In addition, the proposed transfer of the definitions for rated power and thrust from § 1.1 to proposed new § 33.6, Proposal 8-1, is withdrawn since the transfer may cause confusion in the administration of the aircraft certification requirements. Accordingly, Proposals 8-1, 8-20, 8-56, and 8-94 are withdrawn.

Proposal 8-95. For discussion of proposed § 33.19(b) see the discussion under Proposal 8-103. Revised § 33.19 is adopted without substantive change.

Amendment to §§ 33.55(c), 33.57(11), 33.93(11), and 33.99(11). Because of the deletion of §§ 33.5(c), (d), and (e), and the addition of a new § 33.4, the reference to “§ 33.5” in §§ 33.55(c), 33.57(h), 33.93(h), and 33.99(h) is no longer appropriate. For consistency, the reference is “§ 33.4.” This change was inadvertently overlooked and was not proposed in Notice 75-31 (40 FR 29410; July 11, 1975). This editorial change corrects that discrepancy. Since this amendment is clarifying in nature and does not impose a burden on the public, notice and public procedure are unnecessary and good cause exists for adopting this amendment.

Proposal 8-97. A commenter recommends that § A33.3(a) (6) of Appendix A to Part 33 be revised by adding the words “requiring periodic attention” so as to make it clear that scheduling information is required solely for parts that require such attention. The language in this section is adequate. For parts not needing periodic attention, the applicant has only to state that parts not scheduled need not be serviced.

A commenter infers incorrectly that proposed §§ 43.16 and 91.163(c) apply only to rotorcraft. These regulations with the revision proposed also affect other classes of aircraft, as well as engines and propellers.

Some comments received on the proposed appendices for Parts 23, 25, 27, and 29 (Proposal 8-25) were equally valid with respect to proposed Appendix A to both Parts 33 and 35. Accordingly, the appendices to Parts 33 and 35 are revised in substance as applicable.

Proposal 8-98. For a discussion related to proposed § 35.3 see Proposal 8-93. A commenter observes that § 35.3 requires that the instruction manual for installing and operating the propeller be “approved,” whereas § 35.4 requires that the Instructions for Continued *Airworthiness* be “acceptable to the Administrator,” and recommends that the latter term be used for consistency. The FAA notes that the term “acceptable to the Administrator” is widely used in Part 43 in connection with maintenance requirements, while the term “approved” is more frequently used in FAR parts containing installation and operating requirements. Considering the FAR as a whole, the FAA does not agree that consistency is required in this instance. Accordingly, § 35.3 is adopted as proposed.

Proposal 8-99. In response to the concern of a commenter representing a number of Part 121 operators, the FAA notes that there is no requirement that any operator/owner use the Instructions for Continued Airworthiness referred to in proposed § 35.4. The new §§ 43.13(a), 43.16, and 91.163(c) allow the use of other methods. In particular, the use of maintenance manuals and continuous airworthiness maintenance programs developed under Parts 121, 123, 127, and 135, or an inspection program approved under § 91.217(e) would be acceptable alternatives to the Airworthiness Limitations section. This commenter suggests that language be added to proposed § 35.4 to make it clear that such alternatives may be used. The FAA agrees. The language in §§ 43.16 and 91.163(c) is revised accordingly.

Consistent with the discussion on proposed § 33.4 dealing with engines (see Proposal 8-92), the FAA finds that requiring the propeller manufacturer to complete the Instructions for Continued Airworthiness before the type certificate is issued would constitute an unnecessary burden. Accordingly, § 35.4 as adopted, requires that those instructions be made available and furnished upon delivery of the first aircraft with the propeller installed, or upon issuance of a standard certificate of airworthiness for an aircraft with the propeller installed, whichever occurs later.

Proposal 8-100. No unfavorable comments were received on the proposal to amend § 35.5 to more clearly indicate the basis for operating limitations and where they are listed. Accordingly, § 35.5 is adopted without substantive change.

Proposal 8-101. No unfavorable comments were received on the proposal to amend § 35.23 to provide an extreme low pitch indication. Accordingly, § 35.23 is adopted without substantive change.

Proposal 8-102. A commenter does not concur with the proposal to revise § 35.37 to require evaluation of metallic hubs and blades, stating that the words “must”, “all”, and “reasonably foreseeable” in the second sentence imply responsibility beyond current knowledge and the state of the art. The FAA does not agree. These terms are used in the current rule and the current state of the art defines the limits of the provision.

The same commenter recommends that § 35.37 be revised to apply to consideration of “normal and reasonably foreseeable load patterns,” to account for the fact that only normal operations will or

In addition, the proposed transfer of the definitions for rated power and thrust from § 1.1 to proposed new § 33.6, Proposal 8-1, is withdrawn since the transfer may cause confusion in the administration of the aircraft certification requirements. Accordingly, Proposals 8-1, 8-20, 8-56, and 8-94 are withdrawn.

Proposal 8-95. For discussion of proposed § 33.19(b) see the discussion under Proposal 8-103. Revised § 33.19 is adopted without substantive change.

Amendment to §§ 33.55(c), 33.57(11), 33.93(11), and 33.99(11). Because of the deletion of §§ 33.5(c), (d), and (e), and the addition of a new § 33.4, the reference to “§ 33.5” in §§ 33.55(c), 33.57(h), 33.93(h), and 33.99(h) is no longer appropriate. For consistency, the reference is “§ 33.4.” This change was inadvertently overlooked and was not proposed in Notice 75-31 (40 FR 29410; July 11, 1975). This editorial change corrects that discrepancy. Since this amendment is clarifying in nature and does not impose a burden on the public, notice and public procedure are unnecessary and good cause exists for adopting this amendment.

Proposal 8-97. A commenter recommends that § A33.3(a) (6) of Appendix A to Part 33 be revised by adding the words “requiring periodic attention” so as to make it clear that scheduling information is required solely for parts that require such attention. The language in this section is adequate. For parts not needing periodic attention, the applicant has only to state that parts not scheduled need not be serviced.

A commenter infers incorrectly that proposed §§ 43.16 and 91.163(c) apply only to rotorcraft. These regulations with the revision proposed also affect other classes of aircraft, as well as engines and propellers.

Some comments received on the proposed appendices for Parts 23, 25, 27, and 29 (Proposal 8-25) were equally valid with respect to proposed Appendix A to both Parts 33 and 35. Accordingly, the appendices to Parts 33 and 35 are revised in substance as applicable.

Proposal 8-98. For a discussion related to proposed § 35.3 see Proposal 8-93. A commenter observes that § 35.3 requires that the instruction manual for installing and operating the propeller be “approved,” whereas § 35.4 requires that the Instructions for Continued *Airworthiness* be “acceptable to the Administrator,” and recommends that the latter term be used for consistency. The FAA notes that the term “acceptable to the Administrator” is widely used in Part 43 in connection with maintenance requirements, while the term “approved” is more frequently used in FAR parts containing installation and operating requirements. Considering the FAR as a whole, the FAA does not agree that consistency is required in this instance. Accordingly, § 35.3 is adopted as proposed.

Proposal 8-99. In response to the concern of a commenter representing a number of Part 121 operators, the FAA notes that there is no requirement that any operator/owner use the Instructions for Continued Airworthiness referred to in proposed § 35.4. The new §§ 43.13(a), 43.16, and 91.163(c) allow the use of other methods. In particular, the use of maintenance manuals and continuous airworthiness maintenance programs developed under Parts 121, 123, 127, and 135, or an inspection program approved under § 91.217(e) would be acceptable alternatives to the Airworthiness Limitations section. This commenter suggests that language be added to proposed § 35.4 to make it clear that such alternatives may be used. The FAA agrees. The language in §§ 43.16 and 91.163(c) is revised accordingly.

Consistent with the discussion on proposed § 33.4 dealing with engines (see Proposal 8-92), the FAA finds that requiring the propeller manufacturer to complete the Instructions for Continued Airworthiness before the type certificate is issued would constitute an unnecessary burden. Accordingly, § 35.4 as adopted, requires that those instructions be made available and furnished upon delivery of the first aircraft with the propeller installed, or upon issuance of a standard certificate of airworthiness for an aircraft with the propeller installed, whichever occurs later.

Proposal 8-100. No unfavorable comments were received on the proposal to amend § 35.5 to more clearly indicate the basis for operating limitations and where they are listed. Accordingly, § 35.5 is adopted without substantive change.

Proposal 8-101. No unfavorable comments were received on the proposal to amend § 35.23 to provide an extreme low pitch indication. Accordingly, § 35.23 is adopted without substantive change.

Proposal 8-102. A commenter does not concur with the proposal to revise § 35.37 to require evaluation of metallic hubs and blades, stating that the words “must”, “all”, and “reasonably foreseeable” in the second sentence imply responsibility beyond current knowledge and the state of the art. The FAA does not agree. These terms are used in the current rule and the current state of the art defines the limits of the provision.

The same commenter recommends that § 35.37 be revised to apply to consideration of “normal and reasonably foreseeable load patterns,” to account for the fact that only normal operations will or

Proposal 8-107. A commenter representing a number of scheduled air carriers recommends that the Airworthiness Limitations section referred to in proposed § 43.16 include life limitations only and not inspections or other maintenance items. As discussed under Proposal 8-3, the FAA does not agree.

A commenter suggests that the words “or other methods, techniques; and practices acceptable to the Administrator” be added at the end of proposed § 43.16 to make it consistent with proposed § 43.13(a). The Airworthiness Limitations section contains specific mandatory replacement times and inspection intervals (with related procedures) that must be complied with, unless it can be shown by an operator with an approved maintenance program that these times are inappropriate for his operation. The use of alternatives not covered in the Airworthiness Limitations section would be allowed if approved by the Administrator. Section 43.16 is revised to specifically state the alternatives to compliance with the Airworthiness Limitations section.

Proposal 8-108. No unfavorable comments were received on the proposal to amend § 45.11 to qualify, with respect to manned free balloons, the requirements in § 45.11(a) that deal with the location of the identification plate. Accordingly, the proposal is adopted without substantive change.

Proposal 8-109. No unfavorable comments were received on the proposal to amend § 45.13 to correctly reference §§ 45.11(a) and (b) with regard to identification plate requirements. Accordingly, the proposal is adopted without substantive change.

Proposal 8-110. A commenter representing a number of scheduled air carriers recommends that the words “inspection interval, or related procedure” be deleted from proposed § 45.14. The supporting rationale is the same as submitted by this commenter concerning Proposal 8-3 to amend § 21.31(c). As discussed under Proposal 8-3, the FAA disagrees.

The language in § 45.14 covers rotorcraft as well as airplanes, balloons, engines, and propellers. To make this clear, the word “Rotorcraft” is changed to “Manufacturer’s”.

Two commenters object to proposed § 45.14 on the grounds that it would be impracticable to mark small parts with a part and serial number. The FAA is not aware that the marking of small parts under current § 45.14 has presented a problem. In any event, the rule allows markings that are equivalent to part and serial numbers, such as symbols enabling the identification of the part as one for which a replacement time, inspection interval, or related procedure is specified in an Airworthiness Limitations section. Identification of such parts is clearly essential for safety. Accordingly, § 45.14 is adopted as revised.

Proposal 8-111. A commenter representing a number of scheduled air carriers recommends that the words “inspection interval, or related procedure” be deleted from proposed § 91.163(c). The supporting rationale is the same as that submitted by this commenter concerning Proposal 8-3 to amend § 21.31(c). As discussed under Proposal 8-3, the FAA disagrees. However, § 91.163(c) is revised to specifically identify the acceptable alternatives to compliance with the “Airworthiness Limitations” section.

The language in proposed § 91.163(c) covers rotorcraft as well as airplanes, balloons, engines, and propellers. To make this clear, the word “Rotorcraft” in § 91.163(c) has been changed to “Manufacturer’s”, and a statement has been added that operations specifications approved by the Administrator may be used in lieu of the Instructions for Continued Airworthiness. Section 91.163(c) is adopted as revised.

Proposal 8-112. No unfavorable comment was received on the proposal to amend § 91.165 to clarify maintenance personnel entries in maintenance records. Accordingly, the proposal is adopted without substantive change.

Proposal 8-113. Several commenters object to §§ 91.173(a) (2) (i) and (iii). A commenter states that adoption of the proposal would result in an inconsistency between § 91.173 and § 121.380, which contains the recordkeeping requirements for aircraft maintained under Part 121. The commenter also states that this inconsistency would cause great difficulty and economic hardship whenever an aircraft is sold by a Part 121 operator to a Part 91 operator and the Part 91 aircraft is maintained by a Part 121 operator under its repair station certificate. According to the commenter, the economic hardship would occur to both the Part 91 operator and the repair station. The same commenter contends that reliability information accumulated in recent years on transport category airplanes shows that there is no need for individualized total time records on equipment and components. Another commenter states that proposed requirements would result in large increases in maintenance costs for Part 91 operators and that only those components that are life-limited should have to carry total times.

The FAA concludes, however, that revision of § 91.173(a) (2) (i) would contribute significantly to safety with little burden on those affected. The currently prescribed record of total time in service for the airframe does not generally apply to the aircraft’s engines or propellers, since these components

are frequently overhauled (or replaced) at different times. As a practical matter, it is known that operators of such aircraft normally keep records from which the total time in service of engines and propellers can be derived. Therefore, the FAA does not agree that the requirement to keep total times on engines and propellers would be a hardship and burden upon the operators. Accordingly, § 91.173(a) (2) (i) is adopted without change.

In light of the comment on proposed § 91.173(a) (2) (iii), the FAA has given further review of the proposal and has concluded that existing requirements satisfy the objective of the proposal. Accordingly proposed § 91.173(a) (2) (iii) is withdrawn.

The reporting and recordkeeping requirements contained in § 91.173 have been approved by the Office of Management and Budget in accordance with the Federal Reports Act of 1942.

Proposal 8-114. Several commenters agree with the intent of proposed § 91.193(c) (4) but suggest changes. A commenter suggests that the proposed installation instructions for hand fire extinguishers would be more appropriately placed in the type certification rules. The FAA does not agree. New type certification rules do not apply to aircraft already in service.

A commenter suggests that the words "unless obvious" be added to clarify when the hand fire extinguisher stowage provisions must be properly identified. The FAA agrees. Proposed § 91.193(c) (4) is revised and adopted accordingly.

Proposal 8-115. One commenter objects to the proposal to revise § 91.197(a) to require passenger information signs to meet the requirements of § 25.791. The commenter states that it is unnecessary, in many small general aviation aircraft operating under Subpart D of Part 91, to have such signs just for the sake of uniformity. The commenter also states that "nonstandard" signs now in use are wholly adequate to meet the needs of the type of operation. Finally, the commenter points out that installation costs for aircraft not currently having signs would be high and the pilot could just as easily announce the information as he could activate the signs.

Based on these comments and considering the type of operation involved, the FAA finds that the benefits associated with the proposal do not warrant its adoption. The proposal to revise § 91.197(a) is withdrawn.

Proposals 8-116, 8-117, 8-118, and 8-119. Final action on Proposals 8-116, 8-117, 8-118, and 8-119 was taken in Airworthiness Review Program, Amendment No. 8: Cabin Safety and Flight Attendant Amendments (45 FR 7750; February 4, 1980).

Proposal 8-120. In light of the need to conduct further testing of protective breathing equipment, the FAA withdraws its proposal to amend § 121.337, which will be addressed in an upcoming notice of proposed rule making.

ADOPTION OF THE AMENDMENT

Accordingly, Parts 11, 21, 23, 25, 27, 29, 31, 33, 35, 43, 45, and 91 of the Federal Aviation Regulations are amended, effective October 14, 1980.

(Sections 313(a), 601,603, and 604 of the Federal Aviation Act of 1958(49 U.S.C. 1354(a), 1421, 1423, and 1424)); and Section 6(c) of the Department of Transportation Act (49 U.S.C. 165S(c)))

The FAA has determined that this document involves a regulation which is not significant under Executive Order 12044, as implemented by Department of Transportation Regulatory Policies and Procedures (44 FR 11034; February 26, 1979). A copy of the final evaluation prepared for this document is contained in the docket. A copy of it may be obtained by writing to the individual and address listed in the "For Further Information Contact" paragraph.

are frequently overhauled (or replaced) at different times. As a practical matter, it is known that operators of such aircraft normally keep records from which the total time in service of engines and propellers can be derived. Therefore, the FAA does not agree that the requirement to keep total times on engines and propellers would be a hardship and burden upon the operators. Accordingly, § 91.173(a) (2) (i) is adopted without change.

In light of the comment on proposed § 91.173(a) (2) (iii), the FAA has given further review of the proposal and has concluded that existing requirements satisfy the objective of the proposal. Accordingly proposed § 91.173(a) (2) (iii) is withdrawn.

The reporting and recordkeeping requirements contained in § 91.173 have been approved by the Office of Management and Budget in accordance with the Federal Reports Act of 1942.

Proposal 8-114. Several commenters agree with the intent of proposed § 91.193(c) (4) but suggest changes. A commenter suggests that the proposed installation instructions for hand fire extinguishers would be more appropriately placed in the type certification rules. The FAA does not agree. New type certification rules do not apply to aircraft already in service.

A commenter suggests that the words "unless obvious" be added to clarify when the hand fire extinguisher stowage provisions must be properly identified. The FAA agrees. Proposed § 91.193(c) (4) is revised and adopted accordingly.

Proposal 8-115. One commenter objects to the proposal to revise § 91.197(a) to require passenger information signs to meet the requirements of § 25.791. The commenter states that it is unnecessary, in many small general aviation aircraft operating under Subpart D of Part 91, to have such signs just for the sake of uniformity. The commenter also states that "nonstandard" signs now in use are wholly adequate to meet the needs of the type of operation. Finally, the commenter points out that installation costs for aircraft not currently having signs would be high and the pilot could just as easily announce the information as he could activate the signs.

Based on these comments and considering the type of operation involved, the FAA finds that the benefits associated with the proposal do not warrant its adoption. The proposal to revise § 91.197(a) is withdrawn.

Proposals 8-116, 8-117, 8-118, and 8-119. Final action on Proposals 8-116, 8-117, 8-118, and 8-119 was taken in Airworthiness Review Program, Amendment No. 8: Cabin Safety and Flight Attendant Amendments (45 FR 7750; February 4, 1980).

Proposal 8-120. In light of the need to conduct further testing of protective breathing equipment, the FAA withdraws its proposal to amend § 121.337, which will be addressed in an upcoming notice of proposed rule making.

ADOPTION OF THE AMENDMENT

Accordingly, Parts 11, 21, 23, 25, 27, 29, 31, 33, 35, 43, 45, and 91 of the Federal Aviation Regulations are amended, effective October 14, 1980.

(Sections 313(a), 601,603, and 604 of the Federal Aviation Act of 1958(49 U.S.C. 1354(a), 1421, 1423, and 1424)); and Section 6(c) of the Department of Transportation Act (49 U.S.C. 165S(c)))

The FAA has determined that this document involves a regulation which is not significant under Executive Order 12044, as implemented by Department of Transportation Regulatory Policies and Procedures (44 FR 11034; February 26, 1979). A copy of the final evaluation prepared for this document is contained in the docket. A copy of it may be obtained by writing to the individual and address listed in the "For Further Information Contact" paragraph.

Amendment 45-13**Size of Registration Marks****Adopted: September 3, 1981****Effective: November 2, 1981****(Published in 46 FR 48600, October 1, 1981)**

SUMMARY: The amendments require the display of registration marks, N-numbers, at least 12 inches high on certain fixed-wing aircraft in place of the smaller marks previously allowed by Federal Aviation Regulations. The amendments are needed to provide better visual identification of those aircraft. The rule is intended to improve air traffic flow at airports, discourage violations, and improve enforcement of Federal Aviation Regulations regarding low-flying aircraft.

To avoid undue cost of compliance to aircraft owners and manufacturers, an aircraft displaying small marks before the effective date of the amendments and an aircraft manufactured after November 2, 1981, but before January 1, 1983, will be allowed to continue to display those marks until the aircraft is repainted or the marks are restored, repainted, or changed. These amendments do not change existing rules on the use of special marking procedures for: (1) small aircraft used for exhibition purposes; (2) small aircraft built at least 30 years ago; (3) unusually configured aircraft; and (4) aircraft issued an experimental certificate for operating as either exhibition or amateur-built aircraft.

FOR FURTHER INFORMATION CONTACT: Mr. Joseph A. Sirkis, Regulatory Projects Branch, AVS-24, Safety Regulations Staff, Associate Administrator for Aviation Standards, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, D.C. 20591; Telephone (202) 755-8716.

SUPPLEMENTARY INFORMATION:

Background

On December 31, 1960, the FAA began to require 12-inch-high registration marks, N-numbers, to be displayed on the sides of airplane fuselages. The use of these marks had been advocated by the U.S. Air Force and air traffic controllers. The Air Force advocated the side markings as a means of decreasing the collision heard associated with air-to-air identification of aircraft. Air traffic controllers also advised that these marks facilitate visual identification of aircraft, which aids in safer aircraft traffic control at airports. At the same time, underwing marks were considered and rejected as being costly and ineffective.

In 1977, the size of N-numbers was reduced to 3 inches for small fixed-wing aircraft with speeds not greater than 180 knots. This was in response to a petition for rulemaking submitted by the Experimental Aircraft Association (EAA) to improve the aesthetic appearance of small general aviation aircraft. Based on the facts at hand and since there were no substantive objections from the Department of Defense, law enforcement agencies, or the public sector, the amendment was adopted.

After fixed-wing aircraft began to display 3-inch marks, the FAA began to receive complaints from private citizens, law enforcement agencies, the U.S. Customs Service, and the Department of Defense. Air Traffic Service reports and field inspectors' reports also began to show instances in which aircraft displaying these small marks could not be identified. These complaints established that operational efficiency has been affected by aircraft displaying small numbers and that positive and timely visual identification at busy general aviation airports has been compromised.

Because of these concerns, on July 24, 1980, Notice of Proposed Rulemaking No. 80-11 was issued (45 FR 50810; July 31, 1980), proposing reinstatement of the 12-inch marks on certain aircraft. The comment period was extended 60 days, to November 28, 1980, to allow participants ample time to submit comments.

Notice 80-11 also responded to the petition of Raven Industries, Inc., of Sioux Falls, South Dakota, which requested that the FAA reduce the 20-inch height requirement for nationality and registration marks on airships, spherical balloons, and nonspherical balloons.

Interested persons were given an opportunity to participate in the making of this rule, and due consideration was given to all information submitted. Except as discussed in this preamble, the revisions adopted by this amendment and the reasons for them are the same as those in Notice 80-11.

Need for Amendments

Civic organizations in California, Florida, New York, New Jersey, and Hawaii have submitted resolutions asking, and private citizens have requested, that the FAA impose regulations that require larger

N-numbers to be displayed on all civil aircraft for better visual identification. The organizations have expressed concern about low-flying aircraft over citizens' homes that cause hazardous conditions and considerable noise. Further, citizens complain that aircraft cannot be identified positively because the identification marks are too small to see. Without accurate identification, appropriate action cannot be taken against violators of regulations.

The FAA has received reports and complaints that law enforcement activities have been hampered by 3-inch marks. Agencies on the Federal, State, and local levels have complained of an increase in cases involving aircraft in various illegal acts and operations. Some law enforcement agencies have asserted that it is virtually impossible to identify aircraft displaying small marks and that identification through registration marks is the important element in investigation and in prosecutions.

The Department of Defense (DOD) has recommended that 12-inch registration marks again be required on all civil aircraft. The recommendation was based on statistical data acquired from hazardous traffic reports. DOD indicated that large N-numbers would eliminate the need for military aircraft to closely approach civil aircraft displaying small marks to identify them. Accordingly, DOD has reconsidered and revised its 1976 decision regarding 3-inch marks.

Air traffic controller reports have indicated that even with mandatory radio communication between pilots and controllers and the aid of optics (binoculars, etc.), a high rate of aircraft traffic flow cannot be maintained safely without positive visual identification of aircraft, especially at airports with high general aviation activity. This air traffic problem is increased at complex airports with multiple runways and intersections, where it is difficult for transient pilots to know, or properly describe, their location on the airport. The frequent use of radio transmissions to ascertain an aircraft's exact location is time-consuming and detrimental to airport operation because control frequency congestion is also increased. This congestion of the control frequency leads to blocked or partially blocked radio transmissions that often result in misinterpreted clearances and unauthorized aircraft movements. Complicating the problem of safe and efficient aircraft control is the low level of experience of some pilots, which frequently makes it essential to identify quickly, and communicate with, an aircraft making an unauthorized movement.

For these reasons it is in the public interest to change the minimum height of aircraft registration marks from 2 inches and 3 inches to 12 inches on aircraft that have been involved in these problems.

Discussion of Comments

Comments from individuals on Notice 80-11 largely oppose the proposal. However, many commenters give no reasons for their opposition or specific suggestions that would resolve the problems posed by the old regulation. Many commenters indicate a misunderstanding of the notice or conclude that no one problem is important enough to require a rule change. For example, early comments indicate owners of excepted aircraft are not aware of the exceptions. Others are not aware of the minimal cost involved or of the provision for delayed compliance. Many are of the opinion that large numbers should not be required since the same size numbers are not used on other transportation vehicles, and cannot be seen at night, in bad weather, or when aircraft are out of visible range. Some objections minimize or dismiss out of hand the need for improving aircraft identification in favor of aesthetics. These issues are discussed in subsequent paragraphs with specific comments on the proposed rule.

Comments from those favoring the rule indicate general agreement with the notice as published. The requests and comments concerned with improving aircraft identification span a wide range of specific problems. For example, citizens and civic organizations from all across the United States cite as unacceptable hazardous low flying, the disregard of normal air traffic patterns, and the disregard of noise abatement procedures by unidentifiable aircraft. The problems also involve violations by aircraft that engage in sightseeing while flying low over congested areas, such as beaches, parks, or stadium events; agricultural aircraft improperly spraying toxic materials; as well as prohibited hunting, smuggling, and other illegal activities.

Because of smugglers using small aircraft, government agencies have requested the FAA to revert back to 12-inch-high marks. For example, the Western Caribbean/Central American Flight Safety Group, with U.S. participation that includes the Drug Enforcement Administration, the FAA, the Customs Service, and the National Transportation Safety Board, requested that the size of N-numbers on small aircraft be increased.

Further, FAA General Aviation District Offices have reported that investigations and enforcement actions have been hampered by the lack of positive aircraft identification. Since 3-inch marks were allowed, the number of reported low-flying violations has increased nearly 20 percent, yet the number of investigations completed dropped nearly 30 percent. Identification of aircraft by description instead of N-number is insufficient to locate alleged violators.

N-numbers to be displayed on all civil aircraft for better visual identification. The organizations have expressed concern about low-flying aircraft over citizens' homes that cause hazardous conditions and considerable noise. Further, citizens complain that aircraft cannot be identified positively because the identification marks are too small to see. Without accurate identification, appropriate action cannot be taken against violators of regulations.

The FAA has received reports and complaints that law enforcement activities have been hampered by 3-inch marks. Agencies on the Federal, State, and local levels have complained of an increase in cases involving aircraft in various illegal acts and operations. Some law enforcement agencies have asserted that it is virtually impossible to identify aircraft displaying small marks and that identification through registration marks is the important element in investigation and in prosecutions.

The Department of Defense (DOD) has recommended that 12-inch registration marks again be required on all civil aircraft. The recommendation was based on statistical data acquired from hazardous traffic reports. DOD indicated that large N-numbers would eliminate the need for military aircraft to closely approach civil aircraft displaying small marks to identify them. Accordingly, DOD has reconsidered and revised its 1976 decision regarding 3-inch marks.

Air traffic controller reports have indicated that even with mandatory radio communication between pilots and controllers and the aid of optics (binoculars, etc.), a high rate of aircraft traffic flow cannot be maintained safely without positive visual identification of aircraft, especially at airports with high general aviation activity. This air traffic problem is increased at complex airports with multiple runways and intersections, where it is difficult for transient pilots to know, or properly describe, their location on the airport. The frequent use of radio transmissions to ascertain an aircraft's exact location is time-consuming and detrimental to airport operation because control frequency congestion is also increased. This congestion of the control frequency leads to blocked or partially blocked radio transmissions that often result in misinterpreted clearances and unauthorized aircraft movements. Complicating the problem of safe and efficient aircraft control is the low level of experience of some pilots, which frequently makes it essential to identify quickly, and communicate with, an aircraft making an unauthorized movement.

For these reasons it is in the public interest to change the minimum height of aircraft registration marks from 2 inches and 3 inches to 12 inches on aircraft that have been involved in these problems.

Discussion of Comments

Comments from individuals on Notice 80-11 largely oppose the proposal. However, many commenters give no reasons for their opposition or specific suggestions that would resolve the problems posed by the old regulation. Many commenters indicate a misunderstanding of the notice or conclude that no one problem is important enough to require a rule change. For example, early comments indicate owners of excepted aircraft are not aware of the exceptions. Others are not aware of the minimal cost involved or of the provision for delayed compliance. Many are of the opinion that large numbers should not be required since the same size numbers are not used on other transportation vehicles, and cannot be seen at night, in bad weather, or when aircraft are out of visible range. Some objections minimize or dismiss out of hand the need for improving aircraft identification in favor of aesthetics. These issues are discussed in subsequent paragraphs with specific comments on the proposed rule.

Comments from those favoring the rule indicate general agreement with the notice as published. The requests and comments concerned with improving aircraft identification span a wide range of specific problems. For example, citizens and civic organizations from all across the United States cite as unacceptable hazardous low flying, the disregard of normal air traffic patterns, and the disregard of noise abatement procedures by unidentifiable aircraft. The problems also involve violations by aircraft that engage in sightseeing while flying low over congested areas, such as beaches, parks, or stadium events; agricultural aircraft improperly spraying toxic materials; as well as prohibited hunting, smuggling, and other illegal activities.

Because of smugglers using small aircraft, government agencies have requested the FAA to revert back to 12-inch-high marks. For example, the Western Caribbean/Central American Flight Safety Group, with U.S. participation that includes the Drug Enforcement Administration, the FAA, the Customs Service, and the National Transportation Safety Board, requested that the size of N-numbers on small aircraft be increased.

Further, FAA General Aviation District Offices have reported that investigations and enforcement actions have been hampered by the lack of positive aircraft identification. Since 3-inch marks were allowed, the number of reported low-flying violations has increased nearly 20 percent, yet the number of investigations completed dropped nearly 30 percent. Identification of aircraft by description instead of N-number is insufficient to locate alleged violators.

include closing designated runways and curtailing instrument approaches for the duration of the event. Regular airport operations do not lend themselves to these kinds of restrictions.

Cost of Application

Approximately 800 comments, including those of the Aircraft Owners and Pilots Association, the Experimental Aircraft Association, the National Business Aircraft Association, and the General Aviation Manufacturers Association, contend that the cost of increasing the size of N-numbers would impose an undue burden on owners who would have to remark recently painted aircraft displaying 3-inch numbers.

It was apparent that many failed to note that the rule allows affected aircraft displaying small N-numbers before the effective date of this amendment to continue to display the numbers until the aircraft is repainted, or the numbers are repainted, restored, or changed.

The General Aviation Manufacturers Association (GAMA) comments that a member study of the cost associated with adopting the 12-inch numbers indicates that to process and apply these larger N-numbers on aircraft would cost approximately \$50 more than the smaller numbers; that this significant cost would be passed on to owners; and that the burden of compliance and the associated financial strain would be extreme.

FAA information based on estimates obtained from aircraft painting companies indicates that there is no significant price difference for initial painting or repainting of an aircraft that required 3-inch or 12-inch N-numbers, since the cost of applying numbers is negligible when compared to the total cost of painting.

GAMA based its cost estimates on the difference between the cost of applying 3-inch decal numbers as opposed to painting 12-inch numbers on most aircraft. The FAA recognizes that decals have been applied on many new smooth-fuselage aircraft surfaces and by aircraft owners who apply their own numbers. These costs would reflect a lower cost compared with painting N-numbers. Professional aircraft painters on the other hand indicated that painting N-numbers was preferred to applying decals which have to be ordered or stocked for each application and are not cost-effective.

In either case the cost would be minimal. Even the maximum increase in cost of applying N-numbers, estimated at approximately \$50 by GAMA, when compared with the estimated sales price of \$25,000 to \$100,000 for affected new aircraft, is not a significant enough burden to outweigh the need for larger numbers. When an aircraft is only remarked, this incremental cost would not be significant compared to the operating costs of the aircraft during the period preceding re-marking.

Moreover, to avoid any undue cost burden on aircraft owners and manufacturers, the rule, as adopted, will allow an aircraft which displayed marks smaller than 12 inches high before the effective date of these amendments and a new aircraft manufactured after the effective date of the amendments, but before January 1, 1983, to display those marks until the aircraft is repainted or the marks are restored, repainted, or changed.

Aircraft Aesthetics

Approximately 700 commenters assert that the 12-inch N-numbers affect the aesthetics of aircraft and ruin their appearance. The FAA recognizes that this may be true; however, the safety benefits of providing for positive aircraft identification have been determined to outweigh aircraft aesthetics.

Discrimination

Approximately 400 commenters contend that the rule is discriminatory. Most comments regarding discrimination note that vehicles in other transportation systems such as automobiles, trucks, boats, and ships display small marks or marks that are proportionately smaller than the 12-inch marks required for aircraft.

The FAA recognizes the differences in the size of registration marks for vehicles in the different modes of transportation. However, there are vast differences in visual identification requirements imposed by the different operational environments. Since aircraft speeds are much greater than those of automobiles, trucks, boats, and ships and aircraft operations are not simply confined to roadways or waterways at ground and sea level, a comparison of requirements for visual identification is not appropriate.

Other commenters believe that it is unjust discrimination to allow aircraft certificated in the experimental category to display 3-inch marks while requiring those in the standard category to display 12-inch marks; however, the discrimination between categories which concerns these commenters has a reasonable basis. The exceptions to the 12-inch requirement for experimental exhibition, experimental amateur-built, and

antique aircraft are supported by consideration of the operational limitations imposed on these aircraft and their limited number.

FAA recognized that the large marks would preclude antique aircraft owners from preserving authenticity and diminish the historical value of these aircraft.

Regarding the operation of experimental-exhibition and experimental amateur-built aircraft (certificated under § 21.191(d) and (g)), FAA has found that these aircraft have not created identification problems. They are required by § 91.42 to operate in limited, tightly controlled and monitored environments, which separate them from busy air traffic control operations. The limitations prescribe that unless authorized by the Administrator experimental aircraft cannot be operated over densely populated areas or congested airways and must operate in daylight hours. The operators also must notify the control tower of the experimental nature of the aircraft when operating into or out of airports with operating control towers. Finally, they must adhere to any other limitations prescribed by the Administrator.

Antique Aircraft

In Notice 80-11, the FAA pointed out that the original designs of many aircraft currently in service are approaching or exceed 30 years of age. This is causing a rapid increase in the number of aircraft eligible to display 2-inch-high marks. In addition, many newer aircraft that have the same external configuration as an aircraft built at least 30 years ago would also be able to display the 2-inch marks. The intent of § 45.22 was to permit the small number of owners exhibiting antique and amateur-built copies of antique aircraft to display 2-inch marks rather than the 12-inch identification marks then required by § 45.29. The FAA recognized that the more visible large marks would detract from the authenticity and diminish the historical value of these small aircraft. The FAA did not anticipate that the rule would eventually permit large commercial aircraft, as well as an increasing number of commercially manufactured copies of older aircraft not in the experimental exhibition or experimental amateur-built category, to display the less-visible 2-inch marks. While the number of antique small aircraft is limited, there is an increasing number of commercially manufactured aircraft that look like them, and this is contributing to the identification and air traffic problems already discussed.

To remedy this problem, this rule will require aircraft not certificated as experimental exhibition or experimental amateur-built to display 12-inch marks, unless they are small aircraft built 30 years ago. These aircraft will no longer be able to display marks as small as 2 inches high, and a proliferation of new aircraft displaying these small marks is expected to cease.

Gliders, Airships, and Balloons

In response to the petition of Raven Industries, Inc., Notice 80-11 also proposed to allow airships, spherical balloons, and nonspherical balloons to display marks at least 3 inches high. Raven Industries asked that the height requirement for nationality and registration marks be reduced from the current requirement of 20 inches to 3 inches for airships, spherical balloons, and nonspherical balloons.

No adverse comments were submitted concerning the decrease in size of marks on gliders, airships, and balloons.

When compared to powered aircraft, there are a relatively small number of gliders (less than 4,000) in operation. Many gliders are not equipped with two-way radios and, thus, operate at uncontrolled airports and at airports with low levels of general aviation activity. These factors minimize radio communication and air traffic control problems associated with gliders displaying 3-inch marks. The lack of easily identifiable numbers has not created enforcement problems with these aircraft. For these reasons, the rule has maintained the 3-inch numbers for registration marks on gliders.

Because of the smaller number and individual characteristics of airships and balloons, they are more easily identified than other aircraft. In addition, balloons are not likely to be used in the conduct of illegal activities, as they would be readily identifiable by their individual characteristics. Their size and maneuvering capabilities facilitate identification and apprehension. Accordingly, marks on airships, spherical balloons, and nonspherical balloons are being reduced from 20 inches to 3 inches.

Alternatives

Two alternatives were available to resolve the aircraft identification problems.

One solution would be to maintain the status quo but restrict the use of busy general aviation airports to aircraft displaying marks at least 12 inches high. This option would solve the identification problems at these airports but would be difficult to implement and enforce. Further, the current law enforcement problems would continue unresolved and would be compounded by new aircraft displaying

antique aircraft are supported by consideration of the operational limitations imposed on these aircraft and their limited number.

FAA recognized that the large marks would preclude antique aircraft owners from preserving authenticity and diminish the historical value of these aircraft.

Regarding the operation of experimental-exhibition and experimental amateur-built aircraft (certificated under § 21.191(d) and (g)), FAA has found that these aircraft have not created identification problems. They are required by § 91.42 to operate in limited, tightly controlled and monitored environments, which separate them from busy air traffic control operations. The limitations prescribe that unless authorized by the Administrator experimental aircraft cannot be operated over densely populated areas or congested airways and must operate in daylight hours. The operators also must notify the control tower of the experimental nature of the aircraft when operating into or out of airports with operating control towers. Finally, they must adhere to any other limitations prescribed by the Administrator.

Antique Aircraft

In Notice 80-11, the FAA pointed out that the original designs of many aircraft currently in service are approaching or exceed 30 years of age. This is causing a rapid increase in the number of aircraft eligible to display 2-inch-high marks. In addition, many newer aircraft that have the same external configuration as an aircraft built at least 30 years ago would also be able to display the 2-inch marks. The intent of § 45.22 was to permit the small number of owners exhibiting antique and amateur-built copies of antique aircraft to display 2-inch marks rather than the 12-inch identification marks then required by § 45.29. The FAA recognized that the more visible large marks would detract from the authenticity and diminish the historical value of these small aircraft. The FAA did not anticipate that the rule would eventually permit large commercial aircraft, as well as an increasing number of commercially manufactured copies of older aircraft not in the experimental exhibition or experimental amateur-built category, to display the less-visible 2-inch marks. While the number of antique small aircraft is limited, there is an increasing number of commercially manufactured aircraft that look like them, and this is contributing to the identification and air traffic problems already discussed.

To remedy this problem, this rule will require aircraft not certificated as experimental exhibition or experimental amateur-built to display 12-inch marks, unless they are small aircraft built 30 years ago. These aircraft will no longer be able to display marks as small as 2 inches high, and a proliferation of new aircraft displaying these small marks is expected to cease.

Gliders, Airships, and Balloons

In response to the petition of Raven Industries, Inc., Notice 80-11 also proposed to allow airships, spherical balloons, and nonspherical balloons to display marks at least 3 inches high. Raven Industries asked that the height requirement for nationality and registration marks be reduced from the current requirement of 20 inches to 3 inches for airships, spherical balloons, and nonspherical balloons.

No adverse comments were submitted concerning the decrease in size of marks on gliders, airships, and balloons.

When compared to powered aircraft, there are a relatively small number of gliders (less than 4,000) in operation. Many gliders are not equipped with two-way radios and, thus, operate at uncontrolled airports and at airports with low levels of general aviation activity. These factors minimize radio communication and air traffic control problems associated with gliders displaying 3-inch marks. The lack of easily identifiable numbers has not created enforcement problems with these aircraft. For these reasons, the rule has maintained the 3-inch numbers for registration marks on gliders.

Because of the smaller number and individual characteristics of airships and balloons, they are more easily identified than other aircraft. In addition, balloons are not likely to be used in the conduct of illegal activities, as they would be readily identifiable by their individual characteristics. Their size and maneuvering capabilities facilitate identification and apprehension. Accordingly, marks on airships, spherical balloons, and nonspherical balloons are being reduced from 20 inches to 3 inches.

Alternatives

Two alternatives were available to resolve the aircraft identification problems.

One solution would be to maintain the status quo but restrict the use of busy general aviation airports to aircraft displaying marks at least 12 inches high. This option would solve the identification problems at these airports but would be difficult to implement and enforce. Further, the current law enforcement problems would continue unresolved and would be compounded by new aircraft displaying

Amendment 45-14**Miscellaneous Amendments****Adopted: February 26, 1982****Effective: April 28, 1982****(Published in 47 F.R. 13312, March 29, 1982)**

SUMMARY: These amendments make a number of minor changes to the Federal Aviation Regulations (FAR). They amend certain Parts to change prerequisites required for flight tests and the experience necessary for an airline transport pilot certificate. They change the validity period for the written test for a flight engineer certificate. In addition, they amend certain sections of the FAR by changing the word aircraft to airplane. Part 45 of the FAR is amended to permit an approved parts manufacturer to refer, on a tag, to readily available information when it would be impractical to mark the required eligibility information on the tag. Part 91 of the FAR is amended to delete the list of purposes for which a special flight authorization for foreign civil aircraft may be issued. Other sections are amended for purposes of clarification or correction.

FOR FURTHER INFORMATION CONTACT: Mr. E. Wendell Owens, Regulatory Review Branch (A/S-22), Safety Regulations Staff, Associate Administrator for Aviation Standards, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, D.C. 20591, Telephone (202) 755-8714.

SUPPLEMENTARY INFORMATION:

Background

A number of these amendments address problems in the FAR which have been highlighted by numerous requests for exemptions and extensions of compliance dates. In addition, several areas in the FAR require interpretation and clarification. The remaining changes are editorial.

Generally, these amendments address unrelated items that have accumulated over recent years and are appropriate for consolidation in a miscellaneous amendment package.

Discussion of Comments

The following discussions are keyed to like-numbered proposals contained in Notice 80-23 (45 FR 80450; December 4, 1980).

Proposal 1. The proposal to amend § 21.197 to make Part 135 operators eligible for special flight permits with continuing authorizations was disposed of separately in Amendment 21-54 (46 FR 37876; July 23, 1981).

Proposal 2. This proposal would correct an incomplete listing of sections. The correct sections are listed in Appendix A, Section A23.1(a), as §§ 23.321 through 23.459. No comments were received on this proposal. Accordingly, the proposal is adopted without substantive change.

Proposals 3 and 9. Sections 23.305(a) and 25.305(a) contain parallel requirements for structural strength and deformation; however, these include differences in wording and punctuation from the corresponding statements contained in the similar, but correctly stated §§ 27.305(a) and 29.309(a). These proposals would correct §§ 23.305(a) and 25.305(a) by making them consistent with §§ 27.305(a) and 29.305(a). One commenter points out that the word "or" was erroneously inserted at the time CAR 6 and 7 were recodified to Parts 27 and 29 of the FAR. The commenter further states that §§ 23.305 and 25.305 are correctly stated, and that §§ 27.305(a) and 29.305(a) (which have the word "or" inserted) should be revised accordingly.

As originally written, the word "detrimental" was used to quantify the amount of permanent deformation and prohibit acceptance of a loading test which resulted in deforming the tested article to an extent that would degrade its structural characteristics. Insertion of a comma or a conjunction between "detrimental" and "premanent" would change the intended meaning. Inasmuch as the proposed change would only add to the error, the proposals to amend §§ 23.305 and 25.305 are withdrawn.

Proposal 4. This proposal would rearrange paragraphs (a)(1), (a)(2), and (a)(3) of § 23.441 to ensure that the correct tail load distribution is imposed for the flight condition. One commenter points out that the desired correct correlation between load specifying figures in Appendix B and the alternate load requirements of §§ 23.41(a), (b), and (c) could also be accomplished by leaving (a)(1), (a)(2), and (a)(3) in their present order while changing B6, B7, and B8 to B7, B6, and B8. Inasmuch as the interchange of the numbers 6 and 7 occurred initially when the prefix letter B was added in Amendment No.

Amendment 45-14**Miscellaneous Amendments****Adopted: February 26, 1982****Effective: April 28, 1982****(Published in 47 F.R. 13312, March 29, 1982)**

SUMMARY: These amendments make a number of minor changes to the Federal Aviation Regulations (FAR). They amend certain Parts to change prerequisites required for flight tests and the experience necessary for an airline transport pilot certificate. They change the validity period for the written test for a flight engineer certificate. In addition, they amend certain sections of the FAR by changing the word aircraft to airplane. Part 45 of the FAR is amended to permit an approved parts manufacturer to refer, on a tag, to readily available information when it would be impractical to mark the required eligibility information on the tag. Part 91 of the FAR is amended to delete the list of purposes for which a special flight authorization for foreign civil aircraft may be issued. Other sections are amended for purposes of clarification or correction.

FOR FURTHER INFORMATION CONTACT: Mr. E. Wendell Owens, Regulatory Review Branch (A/S-22), Safety Regulations Staff, Associate Administrator for Aviation Standards, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, D.C. 20591, Telephone (202) 755-8714.

SUPPLEMENTARY INFORMATION:

Background

A number of these amendments address problems in the FAR which have been highlighted by numerous requests for exemptions and extensions of compliance dates. In addition, several areas in the FAR require interpretation and clarification. The remaining changes are editorial.

Generally, these amendments address unrelated items that have accumulated over recent years and are appropriate for consolidation in a miscellaneous amendment package.

Discussion of Comments

The following discussions are keyed to like-numbered proposals contained in Notice 80-23 (45 FR 80450; December 4, 1980).

Proposal 1. The proposal to amend § 21.197 to make Part 135 operators eligible for special flight permits with continuing authorizations was disposed of separately in Amendment 21-54 (46 FR 37876; July 23, 1981).

Proposal 2. This proposal would correct an incomplete listing of sections. The correct sections are listed in Appendix A, Section A23.1(a), as §§ 23.321 through 23.459. No comments were received on this proposal. Accordingly, the proposal is adopted without substantive change.

Proposals 3 and 9. Sections 23.305(a) and 25.305(a) contain parallel requirements for structural strength and deformation; however, these include differences in wording and punctuation from the corresponding statements contained in the similar, but correctly stated §§ 27.305(a) and 29.309(a). These proposals would correct §§ 23.305(a) and 25.305(a) by making them consistent with §§ 27.305(a) and 29.305(a). One commenter points out that the word "or" was erroneously inserted at the time CAR 6 and 7 were recodified to Parts 27 and 29 of the FAR. The commenter further states that §§ 23.305 and 25.305 are correctly stated, and that §§ 27.305(a) and 29.305(a) (which have the word "or" inserted) should be revised accordingly.

As originally written, the word "detrimental" was used to quantify the amount of permanent deformation and prohibit acceptance of a loading test which resulted in deforming the tested article to an extent that would degrade its structural characteristics. Insertion of a comma or a conjunction between "detrimental" and "premanent" would change the intended meaning. Inasmuch as the proposed change would only add to the error, the proposals to amend §§ 23.305 and 25.305 are withdrawn.

Proposal 4. This proposal would rearrange paragraphs (a)(1), (a)(2), and (a)(3) of § 23.441 to ensure that the correct tail load distribution is imposed for the flight condition. One commenter points out that the desired correct correlation between load specifying figures in Appendix B and the alternate load requirements of §§ 23.41(a), (b), and (c) could also be accomplished by leaving (a)(1), (a)(2), and (a)(3) in their present order while changing B6, B7, and B8 to B7, B6, and B8. Inasmuch as the interchange of the numbers 6 and 7 occurred initially when the prefix letter B was added in Amendment No.

Proposal 14. Two comments were received in response to this proposal to revise the marking requirements of § 45.15 so that when it is impractical to mark the required eligibility information on the tag attached to a part or container, the tag may refer to a specific and readily available reference manual or catalog which contains the required information.

One comment was submitted by the Industry Association that petitioned for this rule change. It found the wording of this proposal to be reasonable.

Another commenter believed that the original concept of Parts Manufacturer Approvals (PMA) was primarily based on the production of parts such as spark plugs, pistons, piston pins, etc., to be used as duplicate parts without a specific part number. These parts are, in fact, required to have a specific part number. Further, the PMA manufacturer is required to mark the parts (or tags) with parts replacement eligibility. It was not proposed to remove the requirement for this information from § 45.15; it was proposed to provide that, in those cases where it would not be practical to mark the required eligibility information on the tag, the tag may contain a reference to a readily available manual or catalog containing the required eligibility information.

Section 45.15 is adopted without substantive change.

Proposal 15. Section 61.39(b) has required that an applicant for an airline transport pilot certificate or an additional rating who does not wish to retake the required written examination must have been continuously employed since passing the written examination and be participating in a pilot training program. For the exception from the 24-month requirement to apply, a person had to have been employed by a carrier immediately (within 24 hours) after taking the written examination; a strike or furlough constituted a break in continuous employment, thus invalidating the exception. The FAA has determined that this rule is too restrictive, since it is possible for a pilot to be on vacation for a longer period of time than some strikes or furloughs last, and it would be unfair to apply the exception provision to the vacationing pilot but not the striking or furloughed pilot. Accordingly, Notice 80-23 proposed to amend § 61.39 to provide that the applicant need only be employed within the period ending 24 calendar months after the month in which the applicant passed the written examination and at the time of the flight test. Notice 80-23 also proposed to eliminate the continuous employment requirement and substitute a requirement to complete initial training and when appropriate, transition or upgrade training, and to meet the recurrent training requirements. Requiring an individual's training to be current is a better means of ensuring retention of the knowledge tested by the written test than requiring continuous employment.

One commenter responded in support of the proposal. The proposal is adopted as proposed.

Proposal 16. Section 61.155(d) has provided that a commercial pilot may credit toward the total flight time required for an airline transport pilot certificate any second-in-command time "in operations under Part 121." However, § 61.51(c)(3) provides that for meeting the requirements for a certificate or rating, a pilot may log as second-in-command time all flight time during which that pilot acts as second in command of an aircraft on which more than one pilot is required under the type certification of the aircraft or the regulations under which the flight is conducted. The intent of § 61.51(c)(3), when it was adopted, was that this rule should apply to the experience requirements for each kind of pilot certificate. However, at that time no change was made in § 61.155(d). Notice 80-23 proposed to eliminate the phrase "in operations under Part 121," so that all second-in-command time which meets the requirements of § 61.51(c)(3) may be credited under § 61.155. No comments were received on this proposal.

The proposal is adopted and all second-in-command time which meets the requirements of § 61.51(c)(3) may be credited under § 61.155(d).

Proposal 17. Section 63.35(d) has required continuous participation in a maintenance, flight engineer, or pilot training program of a Part 121 certificate holder for an applicant for a flight engineer certificate to be exempted from the 24-month validity period for the written examination. Similar to § 61.39, this section has been interpreted to mean that any break in employment, such as a strike or furlough, constitutes an interruption of continuous participation in a training program and prevents the exception from applying. The FAA has reevaluated this requirement and has determined that continuous participation in a training program is not essential. Currency in a certificate holder's training program for a flight crewmember or recency of experience for a mechanic employed by a certificate holder ensures knowledge retention better than continuous participation in a training program.

Notice 80-23 proposed to amend § 63.35(d) to apply the exception provision to a flight crewmember or mechanic who is employed by a certificate holder within the period ending 24 calendar months after the month in which the applicant passed the written examination, and whose training is current or meets

Proposal 14. Two comments were received in response to this proposal to revise the marking requirements of § 45.15 so that when it is impractical to mark the required eligibility information on the tag attached to a part or container, the tag may refer to a specific and readily available reference manual or catalog which contains the required information.

One comment was submitted by the Industry Association that petitioned for this rule change. It found the wording of this proposal to be reasonable.

Another commenter believed that the original concept of Parts Manufacturer Approvals (PMA) was primarily based on the production of parts such as spark plugs, pistons, piston pins, etc., to be used as duplicate parts without a specific part number. These parts are, in fact, required to have a specific part number. Further, the PMA manufacturer is required to mark the parts (or tags) with parts replacement eligibility. It was not proposed to remove the requirement for this information from § 45.15; it was proposed to provide that, in those cases where it would not be practical to mark the required eligibility information on the tag, the tag may contain a reference to a readily available manual or catalog containing the required eligibility information.

Section 45.15 is adopted without substantive change.

Proposal 15. Section 61.39(b) has required that an applicant for an airline transport pilot certificate or an additional rating who does not wish to retake the required written examination must have been continuously employed since passing the written examination and be participating in a pilot training program. For the exception from the 24-month requirement to apply, a person had to have been employed by a carrier immediately (within 24 hours) after taking the written examination; a strike or furlough constituted a break in continuous employment, thus invalidating the exception. The FAA has determined that this rule is too restrictive, since it is possible for a pilot to be on vacation for a longer period of time than some strikes or furloughs last, and it would be unfair to apply the exception provision to the vacationing pilot but not the striking or furloughed pilot. Accordingly, Notice 80-23 proposed to amend § 61.39 to provide that the applicant need only be employed within the period ending 24 calendar months after the month in which the applicant passed the written examination and at the time of the flight test. Notice 80-23 also proposed to eliminate the continuous employment requirement and substitute a requirement to complete initial training and when appropriate, transition or upgrade training, and to meet the recurrent training requirements. Requiring an individual's training to be current is a better means of ensuring retention of the knowledge tested by the written test than requiring continuous employment.

One commenter responded in support of the proposal. The proposal is adopted as proposed.

Proposal 16. Section 61.155(d) has provided that a commercial pilot may credit toward the total flight time required for an airline transport pilot certificate any second-in-command time "in operations under Part 121." However, § 61.51(c)(3) provides that for meeting the requirements for a certificate or rating, a pilot may log as second-in-command time all flight time during which that pilot acts as second in command of an aircraft on which more than one pilot is required under the type certification of the aircraft or the regulations under which the flight is conducted. The intent of § 61.51(c)(3), when it was adopted, was that this rule should apply to the experience requirements for each kind of pilot certificate. However, at that time no change was made in § 61.155(d). Notice 80-23 proposed to eliminate the phrase "in operations under Part 121," so that all second-in-command time which meets the requirements of § 61.51(c)(3) may be credited under § 61.155. No comments were received on this proposal.

The proposal is adopted and all second-in-command time which meets the requirements of § 61.51(c)(3) may be credited under § 61.155(d).

Proposal 17. Section 63.35(d) has required continuous participation in a maintenance, flight engineer, or pilot training program of a Part 121 certificate holder for an applicant for a flight engineer certificate to be exempted from the 24-month validity period for the written examination. Similar to § 61.39, this section has been interpreted to mean that any break in employment, such as a strike or furlough, constitutes an interruption of continuous participation in a training program and prevents the exception from applying. The FAA has reevaluated this requirement and has determined that continuous participation in a training program is not essential. Currency in a certificate holder's training program for a flight crewmember or recency of experience for a mechanic employed by a certificate holder ensures knowledge retention better than continuous participation in a training program.

Notice 80-23 proposed to amend § 63.35(d) to apply the exception provision to a flight crewmember or mechanic who is employed by a certificate holder within the period ending 24 calendar months after the month in which the applicant passed the written examination, and whose training is current or meets

Proposal 22. This proposal would delete references to Part 103 in § 121.135(b)(23) and insert appropriate references to Title 49 of the CFR. Since this change was previously accomplished in Operations Review Amendment No. 9 (45 FR 46736), this proposal is withdrawn.

Proposal 23. This proposal would require the interphone system to be accessible for use at enough flight attendant stations so that all floor-level emergency exits in each passenger compartment are observable from one or more of those stations so equipped. Section 121.319(a) requires, in part, that airplanes with a seating capacity of more than 19 passengers must be equipped with a crewmember interphone system. Section 121.319(b)(5)(i) requires that for large turbojet-powered airplanes, the interphone system must be accessible for use at enough flight attendant stations so that all floor-level emergency exits in each passenger compartment are observable from one or more of those stations. From a security and operational viewpoint, if the floor-level exit is located within a galley, and the entryway to the galley is observable, this will satisfy the unnecessary operational/security requirements and, therefore, it would be unnecessary to view the exit itself. No comments were received on this proposal. Accordingly, it is adopted without substantive change.

Proposals 24, 25, 27, and 28. Sections 121.385, 121.389, 121.695, and 121.697 contained inconsistencies in the use of the words “aircraft” and “airplanes.” The proposals would replace the word “aircraft” with the word “airplane” where it appears in §§ 121.385(a), 121.389(a)(2), 121.695(a), and 121.697(a) and (d). These editorial corrections would make the language consistent with the applicable word definitions. No comments were received on these proposals. Accordingly, they are adopted without substantive change.

Proposal 26. This proposal would have amended § 121.585 to require a certificate holder to notify a passenger declaring a firearm in checked baggage of the definition of a “loaded” firearm. It further would have required a certificate holder to determine that ammunition is carried in accordance with the Hazardous Materials Regulations in Title 49 Parts 171, 172, and 173 of the CFR.

Inasmuch as there is no evidence indicating a need for this added provision, and its implementation would impose an additional unnecessary cost on certificate holders, this proposal is withdrawn.

Proposal 29. This proposal would relieve an unnecessary burden on certificate holders that do not have clerical staffs working holidays and weekends by revising § 121.703 to change the reporting time to 9:00 a.m. the second workday following the date of the reportable event for reports covering holidays and weekends. No comments were received on this proposal. Accordingly, this proposal is adopted without substantive change.

Proposal 30. Part 129 prescribes rules governing the operation within the United States of aircraft of foreign air carriers holding a permit issued by the Civil Aeronautics Board (CAB) under Section 402 of the Federal Aviation Act of 1958. Currently, the CAB issues exemptions to permit temporary operations by foreign air carriers without a Section 402 permit provided the foreign air carrier is in compliance with Part 129. This proposal would amend § 129.1 of the FAR to make Part 129 applicable to foreign air carriers who hold either a Section 402 permit or other appropriate economic authority, or an exemption issued by the CAB which requires compliance with that Part. No comments were received on this proposal.

The phrase “conditioned upon the foreign air carrier complying with the requirements of the Part” is ambiguous since Part 129 applies regardless of CAB conditions shown on the economic authority to operate in the United States. Accordingly, this section has been amended and adopted without substantive change.

Proposals 31 and 32. These proposals were disposed of in Amendments 135–13 (46 FR 28301; May 26, 1981) and 135–15 (46 FR 30968; June 11, 1981).

Editorial Corrections

Amendments to §§ 107.13(a) and 121.575 were not proposed in Notice 80–23. They are editorial corrections which are necessary and resulted from new Part 108, Airplane Operator Security (46 FR 3782; February 15, 1981).

These amendments correct §§ 107.13 and 121.575 by inserting the appropriate reference to the new Part. No substantive change is made as a result of the corrections.

ADOPTION OF THE AMENDMENT

Accordingly, Parts 23, 25, 45, 61, 63, 65, 91, 107, 121, and 129 of the Federal Aviation Regulations are amended effective April 28, 1982.

Proposal 22. This proposal would delete references to Part 103 in § 121.135(b)(23) and insert appropriate references to Title 49 of the CFR. Since this change was previously accomplished in Operations Review Amendment No. 9 (45 FR 46736), this proposal is withdrawn.

Proposal 23. This proposal would require the interphone system to be accessible for use at enough flight attendant stations so that all floor-level emergency exits in each passenger compartment are observable from one or more of those stations so equipped. Section 121.319(a) requires, in part, that airplanes with a seating capacity of more than 19 passengers must be equipped with a crewmember interphone system. Section 121.319(b)(5)(i) requires that for large turbojet-powered airplanes, the interphone system must be accessible for use at enough flight attendant stations so that all floor-level emergency exits in each passenger compartment are observable from one or more of those stations. From a security and operational viewpoint, if the floor-level exit is located within a galley, and the entryway to the galley is observable, this will satisfy the unnecessary operational/security requirements and, therefore, it would be unnecessary to view the exit itself. No comments were received on this proposal. Accordingly, it is adopted without substantive change.

Proposals 24, 25, 27, and 28. Sections 121.385, 121.389, 121.695, and 121.697 contained inconsistencies in the use of the words “aircraft” and “airplanes.” The proposals would replace the word “aircraft” with the word “airplane” where it appears in §§ 121.385(a), 121.389(a)(2), 121.695(a), and 121.697(a) and (d). These editorial corrections would make the language consistent with the applicable word definitions. No comments were received on these proposals. Accordingly, they are adopted without substantive change.

Proposal 26. This proposal would have amended § 121.585 to require a certificate holder to notify a passenger declaring a firearm in checked baggage of the definition of a “loaded” firearm. It further would have required a certificate holder to determine that ammunition is carried in accordance with the Hazardous Materials Regulations in Title 49 Parts 171, 172, and 173 of the CFR.

Inasmuch as there is no evidence indicating a need for this added provision, and its implementation would impose an additional unnecessary cost on certificate holders, this proposal is withdrawn.

Proposal 29. This proposal would relieve an unnecessary burden on certificate holders that do not have clerical staffs working holidays and weekends by revising § 121.703 to change the reporting time to 9:00 a.m. the second workday following the date of the reportable event for reports covering holidays and weekends. No comments were received on this proposal. Accordingly, this proposal is adopted without substantive change.

Proposal 30. Part 129 prescribes rules governing the operation within the United States of aircraft of foreign air carriers holding a permit issued by the Civil Aeronautics Board (CAB) under Section 402 of the Federal Aviation Act of 1958. Currently, the CAB issues exemptions to permit temporary operations by foreign air carriers without a Section 402 permit provided the foreign air carrier is in compliance with Part 129. This proposal would amend § 129.1 of the FAR to make Part 129 applicable to foreign air carriers who hold either a Section 402 permit or other appropriate economic authority, or an exemption issued by the CAB which requires compliance with that Part. No comments were received on this proposal.

The phrase “conditioned upon the foreign air carrier complying with the requirements of the Part” is ambiguous since Part 129 applies regardless of CAB conditions shown on the economic authority to operate in the United States. Accordingly, this section has been amended and adopted without substantive change.

Proposals 31 and 32. These proposals were disposed of in Amendments 135–13 (46 FR 28301; May 26, 1981) and 135–15 (46 FR 30968; June 11, 1981).

Editorial Corrections

Amendments to §§ 107.13(a) and 121.575 were not proposed in Notice 80–23. They are editorial corrections which are necessary and resulted from new Part 108, Airplane Operator Security (46 FR 3782; February 15, 1981).

These amendments correct §§ 107.13 and 121.575 by inserting the appropriate reference to the new Part. No substantive change is made as a result of the corrections.

ADOPTION OF THE AMENDMENT

Accordingly, Parts 23, 25, 45, 61, 63, 65, 91, 107, 121, and 129 of the Federal Aviation Regulations are amended effective April 28, 1982.

side fuselage marks. Interested persons were given an opportunity to participate in the making of the rule, and due consideration was given to all information submitted. Except as discussed in this preamble, the revisions adopted by this amendment and the reasons for them are the same as those in NPRM No. 82-6.

Need for Amendments

Costly underwing marking requirements imposed on fixed-wing airplanes were eliminated in 1961 by Amendment 1-4 to Civil Air Regulation Part 1. The bottom surface marking requirements for rotorcraft identification were not changed at that time because they suited the early commercial rotorcraft configurations. Those configurations usually had been adopted from military rotorcraft that had no need for the vertical tail surfaces or other design considerations applicable to small fixed-wing aircraft. Because the low-speed and stability design of these rotorcraft necessitated tail configurations having exposed metal tubular construction, there remained insufficient display area for adequate identification markings.

The new rotorcraft configurations, which have been designed for faster flight and more stability than the early designs, now have compact, low-drag fuselage and tail surfaces that closely resemble those of fixed-wing aircraft. This enables the marking requirements to be standardized.

The concerns of the aviation community regarding visual identification that resulted in the display of larger side fuselage N-numbers on fixed-wing aircraft also apply to rotorcraft. Citizens, law enforcement agencies, and the Department of Defense have complained that aircraft displaying small marks cannot be positively identified because the marks are too small to see; consequently, appropriate action cannot be taken against violators of regulations, particularly low-flying aircraft that cause hazardous conditions and excessive noise in the community.

FAA field offices also stressed the need to standardize aircraft markings and improve the ability to positively identify rotorcraft. Agreement has been expressed regarding the elimination of the large 20-inch bottom surface marks, and adoption of the 12-inch side fuselage numbers has been recommended to provide for positive aircraft identification.

In view of the foregoing, the FAA has determined that it is in the public interest to change the identification requirements on rotorcraft from the display of dual markings now required to standard 12-inch-high fuselage side marks only.

Discussion of Comments

Twenty-eight commenters, who represent the views of rotorcraft manufacturers, associations, and individual owners, submitted responses to NPRM No. 82-6. Generally, the comments favor the elimination of the 20-inch-high bottom surface marks; however, the majority note as unacceptable the requirement to display 12-inch-high N-numbers on the fuselage sides. About 20 commenters object to 12-inch N-numbers because of aesthetics, cost, or insufficient space or question the need for the change at this time. Some commenters recommend withdrawal of the proposed action or the optional use of 12-inch N-number in lieu of the dual markings.

Rotorcraft Aesthetics

Approximately 14 commenters object that 12-inch N-numbers would adversely affect the aesthetics of rotorcraft. The FAA recognizes that this may be true in some cases; however, rotorcraft manufacturers and owners, in most cases, could modify the paint scheme to minimize any adverse effect on aesthetics. The effect of the 12-inch N-number requirement would be no greater on rotorcraft than on fixed-wing aircraft. Furthermore, the FAA must give prime consideration to the factors most affecting the public interest and safety such as positive aircraft identification.

Cost of Compliance

Eleven commenters object to the cost that would be imposed by the proposed 12-inch N-numbers and contend that the FAA evaluation does not reflect the additional costs required to redesign the paint schemes around the proposed large numbers.

The FAA evaluation, as noted in NPRM No. 82-6, primarily reflected the difference in the costs of applying the dual marks now required as compared to applying only the 12-inch side fuselage marks proposed. The FAA agrees with the commenters that the additional costs may be incurred by those rotorcraft operators desiring to modify paint schemes to accommodate the 12-inch N-numbers. Accordingly, the FAA conducted an additional survey of fixed-base operators (FBO's) before issuing this final rule. These costs are included in the final regulatory evaluation.

Further, to avoid any undue cost burden on rotorcraft owners and manufacturers, the rule, as adopted, allows rotorcraft displaying the dual marks before the effective date of the amendment and new rotorcraft manufactured after April 18, 1983, but before December 31, 1983, to display those marks until the rotorcraft is repainted or the N-numbers are restored, repainted, or changed. It is apparent that many failed to note that the amendment would relieve the marking burden on manufacturers and owners by extending the time period for compliance in this manner.

Lack of Space

Approximately 12 commenters contend that many small rotorcraft models have insufficient space to display full-size 12-inch N-numbers.

The FAA recognizes that certain rotorcraft configurations may lack sufficient space to display full-size N-numbers. However, when a rotorcraft to be marked in accordance with § 45.27(a) lacks sufficient space to display full-size marks on either the cabin, fuselage, boom, or tail, then § 45.29(f) allows marks as large as practicable to be displayed on both sides of the largest outside surfaces of the cabin, fuselage, boom, or tail side surfaces.

Alternatives

Some commenters recommend that the present dual-marking requirements be retained. In those cases where attached equipments would obscure the bottom-surface marks, the commenters recommend that the proposed marking requirements could be made optional or handled by the exemption process. The FAA does not consider this a viable alternative since it would perpetuate the use of the ineffective dual markings.

Additionally, FAA experience indicates that those marks are of limited value for aircraft identification. The large bottom surface marks and the small side surface marks were found to be of little value in air-to-air identification. The bottom surface marks may, in some instances, serve as a means of identifying violators of noise abatement programs. However, those marks are of little value unless the aircraft is flying at an appropriate altitude, attitude, and speed; the observer is situated directly below the flight path; and favorable light and weather conditions prevail.

Further, the FAA agrees that retaining the dual-marking requirements would impose an undue economic burden on rotorcraft owners, particularly those who attach equipment that would obscure the bottom surface marks. In those cases, numbers as large as practicable would have to be displayed; however, should the equipment be removed, 20-inch marks would have to be displayed, as required.

Accordingly, the only viable solution to reconcile the identification and marking problems on rotorcraft is to eliminate the ineffective dual marks and adopt the 12-inch side surface marks. The effectiveness of 12-inch marks has been confirmed under actual operating conditions on fixed-wing aircraft and recommended by the DOD and enforcement agencies to enhance rotorcraft identification.

Regulatory Evaluation

The FAA conducted a detailed regulatory evaluation, which is included in the regulatory docket.

The FAA first determined the number of rotorcraft that would be impacted during the 10-year period starting from 1983, the assumed earliest year that the rule change could take effect. Based on a review of the Census of U.S. Civil Aircraft for calendar years 1970–1980, an annual increase factor of 10 percent was applied to determine the forecast number of new rotorcraft for the period 1983–1992. The FAA's analysis indicates that these new rotorcraft and existing rotorcraft (manufactured before 1983) require repainting and thus new registration marks, on the average, every 5 years.

The FAA conducted a new survey of FBO's, which is in addition to the survey conducted for the NPRM No. 82–6. Conversations with the FBO's revealed that by rescinding the current registration marking requirement (standard fuselage bottom and side), the average 1982 dollar cost savings to rotorcraft manufacturers and owners is \$444. The proposed larger side markings would cost an average \$220. Additionally, certain rotorcraft manufacturers and owners will incur costs to modify or develop new paint schemes because larger side marks may not coincide aesthetically with existing paint schemes. Based on conversations with the FBO's, the average weighted distributed cost to modify paint schemes per rotorcraft is \$196. Modification of paint schemes is a one-time cost and applies only to the initial painting of rotorcraft manufactured after the effective date of the rule and the first repainting of existing rotorcraft that occurs after the effective date of the rule. Furthermore, the FAA does not agree that larger side markings will result in a loss of business because customers would not be able to readily identify rotorcraft with modified or new paint schemes as suggested by two commenters to NPRM No. 82–6. Based on conversations with the FBO's, the FAA has determined that these manufacturers and

Further, to avoid any undue cost burden on rotorcraft owners and manufacturers, the rule, as adopted, allows rotorcraft displaying the dual marks before the effective date of the amendment and new rotorcraft manufactured after April 18, 1983, but before December 31, 1983, to display those marks until the rotorcraft is repainted or the N-numbers are restored, repainted, or changed. It is apparent that many failed to note that the amendment would relieve the marking burden on manufacturers and owners by extending the time period for compliance in this manner.

Lack of Space

Approximately 12 commenters contend that many small rotorcraft models have insufficient space to display full-size 12-inch N-numbers.

The FAA recognizes that certain rotorcraft configurations may lack sufficient space to display full-size N-numbers. However, when a rotorcraft to be marked in accordance with § 45.27(a) lacks sufficient space to display full-size marks on either the cabin, fuselage, boom, or tail, then § 45.29(f) allows marks as large as practicable to be displayed on both sides of the largest outside surfaces of the cabin, fuselage, boom, or tail side surfaces.

Alternatives

Some commenters recommend that the present dual-marking requirements be retained. In those cases where attached equipments would obscure the bottom-surface marks, the commenters recommend that the proposed marking requirements could be made optional or handled by the exemption process. The FAA does not consider this a viable alternative since it would perpetuate the use of the ineffective dual markings.

Additionally, FAA experience indicates that those marks are of limited value for aircraft identification. The large bottom surface marks and the small side surface marks were found to be of little value in air-to-air identification. The bottom surface marks may, in some instances, serve as a means of identifying violators of noise abatement programs. However, those marks are of little value unless the aircraft is flying at an appropriate altitude, attitude, and speed; the observer is situated directly below the flight path; and favorable light and weather conditions prevail.

Further, the FAA agrees that retaining the dual-marking requirements would impose an undue economic burden on rotorcraft owners, particularly those who attach equipment that would obscure the bottom surface marks. In those cases, numbers as large as practicable would have to be displayed; however, should the equipment be removed, 20-inch marks would have to be displayed, as required.

Accordingly, the only viable solution to reconcile the identification and marking problems on rotorcraft is to eliminate the ineffective dual marks and adopt the 12-inch side surface marks. The effectiveness of 12-inch marks has been confirmed under actual operating conditions on fixed-wing aircraft and recommended by the DOD and enforcement agencies to enhance rotorcraft identification.

Regulatory Evaluation

The FAA conducted a detailed regulatory evaluation, which is included in the regulatory docket.

The FAA first determined the number of rotorcraft that would be impacted during the 10-year period starting from 1983, the assumed earliest year that the rule change could take effect. Based on a review of the Census of U.S. Civil Aircraft for calendar years 1970–1980, an annual increase factor of 10 percent was applied to determine the forecast number of new rotorcraft for the period 1983–1992. The FAA's analysis indicates that these new rotorcraft and existing rotorcraft (manufactured before 1983) require repainting and thus new registration marks, on the average, every 5 years.

The FAA conducted a new survey of FBO's, which is in addition to the survey conducted for the NPRM No. 82–6. Conversations with the FBO's revealed that by rescinding the current registration marking requirement (standard fuselage bottom and side), the average 1982 dollar cost savings to rotorcraft manufacturers and owners is \$444. The proposed larger side markings would cost an average \$220. Additionally, certain rotorcraft manufacturers and owners will incur costs to modify or develop new paint schemes because larger side marks may not coincide aesthetically with existing paint schemes. Based on conversations with the FBO's, the average weighted distributed cost to modify paint schemes per rotorcraft is \$196. Modification of paint schemes is a one-time cost and applies only to the initial painting of rotorcraft manufactured after the effective date of the rule and the first repainting of existing rotorcraft that occurs after the effective date of the rule. Furthermore, the FAA does not agree that larger side markings will result in a loss of business because customers would not be able to readily identify rotorcraft with modified or new paint schemes as suggested by two commenters to NPRM No. 82–6. Based on conversations with the FBO's, the FAA has determined that these manufacturers and

Further, to avoid any undue cost burden on rotorcraft owners and manufacturers, the rule, as adopted, allows rotorcraft displaying the dual marks before the effective date of the amendment and new rotorcraft manufactured after April 18, 1983, but before December 31, 1983, to display those marks until the rotorcraft is repainted or the N-numbers are restored, repainted, or changed. It is apparent that many failed to note that the amendment would relieve the marking burden on manufacturers and owners by extending the time period for compliance in this manner.

Lack of Space

Approximately 12 commenters contend that many small rotorcraft models have insufficient space to display full-size 12-inch N-numbers.

The FAA recognizes that certain rotorcraft configurations may lack sufficient space to display full-size N-numbers. However, when a rotorcraft to be marked in accordance with § 45.27(a) lacks sufficient space to display full-size marks on either the cabin, fuselage, boom, or tail, then § 45.29(f) allows marks as large as practicable to be displayed on both sides of the largest outside surfaces of the cabin, fuselage, boom, or tail side surfaces.

Alternatives

Some commenters recommend that the present dual-marking requirements be retained. In those cases where attached equipments would obscure the bottom-surface marks, the commenters recommend that the proposed marking requirements could be made optional or handled by the exemption process. The FAA does not consider this a viable alternative since it would perpetuate the use of the ineffective dual markings.

Additionally, FAA experience indicates that those marks are of limited value for aircraft identification. The large bottom surface marks and the small side surface marks were found to be of little value in air-to-air identification. The bottom surface marks may, in some instances, serve as a means of identifying violators of noise abatement programs. However, those marks are of little value unless the aircraft is flying at an appropriate altitude, attitude, and speed; the observer is situated directly below the flight path; and favorable light and weather conditions prevail.

Further, the FAA agrees that retaining the dual-marking requirements would impose an undue economic burden on rotorcraft owners, particularly those who attach equipment that would obscure the bottom surface marks. In those cases, numbers as large as practicable would have to be displayed; however, should the equipment be removed, 20-inch marks would have to be displayed, as required.

Accordingly, the only viable solution to reconcile the identification and marking problems on rotorcraft is to eliminate the ineffective dual marks and adopt the 12-inch side surface marks. The effectiveness of 12-inch marks has been confirmed under actual operating conditions on fixed-wing aircraft and recommended by the DOD and enforcement agencies to enhance rotorcraft identification.

Regulatory Evaluation

The FAA conducted a detailed regulatory evaluation, which is included in the regulatory docket.

The FAA first determined the number of rotorcraft that would be impacted during the 10-year period starting from 1983, the assumed earliest year that the rule change could take effect. Based on a review of the Census of U.S. Civil Aircraft for calendar years 1970–1980, an annual increase factor of 10 percent was applied to determine the forecast number of new rotorcraft for the period 1983–1992. The FAA's analysis indicates that these new rotorcraft and existing rotorcraft (manufactured before 1983) require repainting and thus new registration marks, on the average, every 5 years.

The FAA conducted a new survey of FBO's, which is in addition to the survey conducted for the NPRM No. 82–6. Conversations with the FBO's revealed that by rescinding the current registration marking requirement (standard fuselage bottom and side), the average 1982 dollar cost savings to rotorcraft manufacturers and owners is \$444. The proposed larger side markings would cost an average \$220. Additionally, certain rotorcraft manufacturers and owners will incur costs to modify or develop new paint schemes because larger side marks may not coincide aesthetically with existing paint schemes. Based on conversations with the FBO's, the average weighted distributed cost to modify paint schemes per rotorcraft is \$196. Modification of paint schemes is a one-time cost and applies only to the initial painting of rotorcraft manufactured after the effective date of the rule and the first repainting of existing rotorcraft that occurs after the effective date of the rule. Furthermore, the FAA does not agree that larger side markings will result in a loss of business because customers would not be able to readily identify rotorcraft with modified or new paint schemes as suggested by two commenters to NPRM No. 82–6. Based on conversations with the FBO's, the FAA has determined that these manufacturers and

be considered remote. Any additional explanation is not appropriate for the regulations. Accordingly, § 43.3(h) is adopted as proposed.

Ref: Proposal 424; Committee III.

Section 43.15 Additional performance rules for inspections.

When this rule was initially proposed in Notice No. 85-8, the progressive inspection was inadvertently omitted. To correct this error, the word “progressive” was inserted in § 43.15(c)(3) between the words “100-hour” and “inspection.”

Several commenters recommend that § 43.15(c)(2) and (3) be consolidated into one paragraph and that reference to aircraft type be changed to “a powered aircraft.” Consolidation would not make the regulation any clearer. Emphasis on the fact that both reciprocating-engine-powered aircraft and turbine-engine powered aircraft require runups will help to clarify the intent of the present rule, which does not explicitly address turbine-engine-power aircraft. Thus, the structure of the proposed rule is retained.

Commenters also express the view that the proposal would add confusion as to who should actually runup and/or start the aircraft engine to perform the required runup. As proposed, the regulation could be interpreted as requiring that the person who does the runup be the same person who approves the aircraft for return to service, even though that person may not be qualified to run the engine or engines. The rule requires that the person approving an aircraft for return to service be the person who shall perform the runup to determine satisfactory performance in accordance with the manufacturer’s recommendation. If that person is qualified to return the aircraft to service, that person should also be qualified to perform the runup as required. Two other commenters recommend that, for rotorcraft, the person performing the runup should be a qualified pilot. They argue that when the engines of a helicopter with a fully articulated rotor system are runup, safety dictates that a pilot should perform that runup in case the rotorcraft becomes airborne. The FAA disagrees. Experience has shown that a mechanic who can approve the return of the helicopter to service should be able to safely runup the helicopter, exercising normal caution and good judgement. Section 43.15(c)(2) and (3) is amended as proposed.

Ref: Proposal 429; Committee III.

Part 43, Appendix A-Major Alterations, Major Repairs, and Preventive Maintenance.

All commenters referring to Part 43, Appendix A, strongly concur with the proposal, which would amend the Appendix by adding routine checks or replacement of fuel and oil strainers and filters and magnetic chip detectors under the category of preventive maintenance. The changes to Part 43, Appendix A, are adopted as proposed.

Ref: Proposals 431 and 432; Committee III.

Section 45.14 Identification of critical components.

One commenter proposes that the rule be amended to allow the omission of markings when the Administrator finds that a part is too small or that it is otherwise impractical to mark a part with any of the information required by the rule. The regulation for the marking of critical/life limited components is not new. The only change is that such marking must be made permanent and legible. The FAA has always recognized that some parts “on condition” and removed at overhaul due to wear, tolerance excesses, etc., are not suitable for permanent marking and do not have finite lives approved by the FAA. Further, such parts are not individually specified in the Maintenance Manual Limitations or Continued Airworthiness Document. Thus, such parts need not be permanently marked. Therefore, § 45.14 is amended as proposed.

Ref: Proposal 433; Committee III.

Section 61.3 Requirement for certificates, ratings, and authorizations.

It was the intent of the Rotor 5 review to include authority for Category II operations for rotorcraft. The NPRM inadvertently omitted some of the changes necessary to implement this new authorization; therefore, several changes have been made to the final rule. One such change is the removal of the word “airplane” and its replacement by the word “aircraft” in § 61.3(g). Another is the addition of Part 135 to the flush paragraph after paragraph (f)(2).

Section 61.21 Duration of Category II pilot authorization.

No public comments were received on § 61.21, and the rule is amended as proposed.

Section 61.55 Second-in-command qualification.

The rule will extend the second-in-command pilot qualifications to include helicopters that are type certificated for more than one required pilot flight crewmember. The proposed rule refers to “required flight crewmember.” One commenter points out that unless the word “pilot” is inserted, the rule could be construed to include flight engineers. Since this is not the intent and the omission of the word “pilot” was unintentional, the FAA agrees with the suggestion and the rule is changed accordingly.

The portion of the rule pertaining to an “aircraft” simulator has been changed to “airplane” simulator to reflect the current rule. The FAA had proposed to permit the use of an “aircraft” simulator; however,

the technology for helicopter simulation has not developed as rapidly as the technology for airplane simulation. The FAA will continue to develop guidelines for approval of rotorcraft simulation, and this issue will be addressed in another rulemaking action.

Ref: Proposal 438, Committee III.

Section 61.57 Recent *flight* experience: Pilot in command.

Section 61.67 Category II pilot authorization requirements.

Section 61.87 Requirements for solo *flight*.

Section 61.105 Aeronautical knowledge.

Section 61.107 Flight proficiency.

No public comments were received on § 61.57, § 61.67, § 61.87, § 61.105, or § 61.107, and they are amended as proposed.

Section 61.119 Rotorcraft rating: Aeronautical experience.

Regarding the requirements for a helicopter class rating for a private pilot's license, one commenter suggests that the number of takeoffs and landings required in paragraph (a)(1)(ii) should be reduced to five or, alternatively, that the phrase "en route phase of flight" should be deleted. According to the commenter, if each landing/takeoff operation is separated by an en route phase of flight, an undue economic burden would be placed on the student since "the majority of these operations will be airport-to-airport." The commenter also points out that in some parts of the western United States, suitable night landing areas may be separated by distances in excess of 50 miles.

The FAA has not accepted the requested change for the following reason: The proposed aeronautical experience requirements were discussed at the conference, and it was the consensus that these specific experience requirements are needed to adequately train and prepare a private pilot applicant for a class rating in present-day rotorcraft. It should also be noted that ten takeoffs and landings are required for a private pilot's certificate in an airplane, which is less difficult to operate than a helicopter. It is the position of the FAA that, by increasing the level of aeronautical experience for helicopters, the agency is promoting increased levels of safety. The requirement for ten takeoffs and landings is therefore adopted in the final rule.

The phrase "en route phase of flight" is a necessary part of the regulation, designed to prevent the applicant from merely lifting the helicopter above a given spot, hovering, and then returning it to that spot to achieve the required number of takeoffs and landings. Eliminating the requirement for an "en route phase of flight" would enable the applicant to circumvent the need to demonstrate an ability to maneuver the helicopter successfully at night in all phases of flight.

This requirement will not result in an undue economic burden. Contrary to the assumption made by the commenter that the majority of these operations would be airport-to-airport, a "takeoff and landing separated by an en route phase of flight" could be comprised of a takeoff, a short flight in the vicinity of the takeoff point, and a landing at the same place as the takeoff. An example would be a flight around the landing pattern.

The "en route phase of flight" is intended to relate to the need for certain piloting skills. Demonstration of these skills may be accomplished without flying over long distances. There is nothing in the regulation that requires an applicant to fly from one airport to another. The flight hours and maneuvers required in paragraph (a)(1)(ii) are necessary for safety and do not pose an unnecessary economic burden. Consequently, the rule is adopted as proposed.

An objection was raised to the proposed requirement for 15 hours of flight instruction in a gyroplane. This requirement is necessary to ensure a level of proficiency needed for safe operation of the aircraft. Accordingly, the proposed rule is adopted.

Ref: Proposal 448, 449, and 450; Committee III.

Section 61.125 Aeronautical knowledge.

No public comments were received on § 61.125, and it is amended as proposed.

Section 61.127 Flight proficiency.

This section sets forth the operations that must be performed successfully to demonstrate the flight proficiency required to obtain a commercial pilot certificate. Among the maneuvers required for a helicopter commercial rating is rapid descent with power and recovery.

the technology for helicopter simulation has not developed as rapidly as the technology for airplane simulation. The FAA will continue to develop guidelines for approval of rotorcraft simulation, and this issue will be addressed in another rulemaking action.

Ref: Proposal 438, Committee III.

Section 61.57 Recent *flight* experience: Pilot in command.

Section 61.67 Category II pilot authorization requirements.

Section 61.87 Requirements for solo flight.

Section 61.105 Aeronautical knowledge.

Section 61.107 Flight proficiency.

No public comments were received on § 61.57, § 61.67, § 61.87, § 61.105, or § 61.107, and they are amended as proposed.

Section 61.119 Rotorcraft rating: Aeronautical experience.

Regarding the requirements for a helicopter class rating for a private pilot's license, one commenter suggests that the number of takeoffs and landings required in paragraph (a)(1)(ii) should be reduced to five or, alternatively, that the phrase "en route phase of flight" should be deleted. According to the commenter, if each landing/takeoff operation is separated by an en route phase of flight, an undue economic burden would be placed on the student since "the majority of these operations will be airport-to-airport." The commenter also points out that in some parts of the western United States, suitable night landing areas may be separated by distances in excess of 50 miles.

The FAA has not accepted the requested change for the following reason: The proposed aeronautical experience requirements were discussed at the conference, and it was the consensus that these specific experience requirements are needed to adequately train and prepare a private pilot applicant for a class rating in present-day rotorcraft. It should also be noted that ten takeoffs and landings are required for a private pilot's certificate in an airplane, which is less difficult to operate than a helicopter. It is the position of the FAA that, by increasing the level of aeronautical experience for helicopters, the agency is promoting increased levels of safety. The requirement for ten takeoffs and landings is therefore adopted in the final rule.

The phrase "en route phase of flight" is a necessary part of the regulation, designed to prevent the applicant from merely lifting the helicopter above a given spot, hovering, and then returning it to that spot to achieve the required number of takeoffs and landings. Eliminating the requirement for an "en route phase of flight" would enable the applicant to circumvent the need to demonstrate an ability to maneuver the helicopter successfully at night in all phases of flight.

This requirement will not result in an undue economic burden. Contrary to the assumption made by the commenter that the majority of these operations would be airport-to-airport, a "takeoff and landing separated by an en route phase of flight" could be comprised of a takeoff, a short flight in the vicinity of the takeoff point, and a landing at the same place as the takeoff. An example would be a flight around the landing pattern.

The "en route phase of flight" is intended to relate to the need for certain piloting skills. Demonstration of these skills may be accomplished without flying over long distances. There is nothing in the regulation that requires an applicant to fly from one airport to another. The flight hours and maneuvers required in paragraph (a)(1)(ii) are necessary for safety and do not pose an unnecessary economic burden. Consequently, the rule is adopted as proposed.

An objection was raised to the proposed requirement for 15 hours of flight instruction in a gyroplane. This requirement is necessary to ensure a level of proficiency needed for safe operation of the aircraft. Accordingly, the proposed rule is adopted.

Ref: Proposal 448, 449, and 450; Committee III.

Section 61.125 Aeronautical knowledge.

No public comments were received on § 61.125, and it is amended as proposed.

Section 61.127 Flight proficiency.

This section sets forth the operations that must be performed successfully to demonstrate the flight proficiency required to obtain a commercial pilot certificate. Among the maneuvers required for a helicopter commercial rating is rapid descent with power and recovery.

for cross-country flight for an airplane commercial certificate cannot be substituted for the helicopter cross-country flight requirement.

Another **commenter** objects to the aeronautical experience required of an applicant for a commercial pilot certificate with a gyroplane class rating. The FAA agrees with the **commenter** that the proposed minimum flight hours are excessive. The regulation as proposed would impose the same hour requirements for a gyroplane class rating as for a helicopter class rating: 50 hours of flight time in a gyroplane/helicopter; 15 hours of gyroplane/helicopter flight instruction time; and 35 hours of pilot-in-command time in a gyroplane helicopter. The **commenter** has operated under an exemption to the requirements contained in paragraphs (b)(3) and (4) since 1983. The exemption reduces the respective requirements for a gyroplane class rating to: 25 hours of flight time in a gyroplane; 10 hours of flight instruction in a gyroplane; and 15 hours of pilot-in-command time in a gyroplane. In granting this exemption, the FAA determined that the requirements could be reduced without adversely affecting safety. The FAA now reaffirms this finding and has amended § 61.131 (b) accordingly.

Ref: Proposal 454; Committee III.

Section 61.159 Rotorcraft rating: Aeronautical knowledge.

No public comments were received on § 61.159, and it is amended as proposed.

Section 61.161 Rotorcraft rating: Aeronautical experience.

Proposed § 61.161 (b)(4) is clarified by adding the word “performing” before the phrase “the duties of a pilot in command.” The remainder of § 61.161 is adopted as proposed.

Section 61.163 Rotorcraft rating: Aeronautical skill.

The portion of the proposed rule pertaining to an approved rotorcraft simulator or training device has been deleted. Helicopter simulation issues will be addressed in a separate rulemaking action.

Section 61.165 Rotorcraft rating: Additional category ratings. Part 61, Appendix A-Practical Test Requirements for Airplane Airline Transport Pilot Certificates and Associated Class and Type Ratings.

No public comments were received on § 61.165 or Appendix A. They are amended as proposed. Part 61, Appendix B-Practical Test Requirements for Rotorcraft Airline Transport Pilot Certificates with a Helicopter Class Rating and Associated Type Ratings.

The phrase “ground control approach” in proposed paragraph 11 l(c) has been changed to “surveillance or precision radar approach” to agree with the terminology used in the Airman’s Information Manual.

One **commenter** suggests that in paragraph I(d), the phrase “in accordance with operating limitations” be changed to “in accordance with the Rotorcraft Flight Manual procedures.” The **commenter** notes that power assurance procedures are not operating limitations and are placed in the Rotorcraft Flight Manual in the normal procedures or performance section. The comment is valid, and the language of the final rule has been changed accordingly.

The utility of requiring circling approaches as part of the practical test requirements for rotorcraft airline transport pilot certificates was the subject of another comment. The **commenter** suggests deleting Section 11 l(d) based on the view that a circle-to-land maneuver after completion of an instrument approach is remarkably simple and heard free.

The FAA does not accept this argument. Performing the circle-to-land maneuver after completion of an instrument approach procedure may not always be simpler in a helicopter than it is in an airplane, depending upon the airport environment, weather, and other traffic. A circling approach basically involves different procedures than straight-in approaches. It is, therefore, appropriate for the FAA to require a demonstrated proficiency in executing the maneuver.

A number of **commenters** strongly object to other maneuvers and procedures required for rotorcraft airline transport pilot ratings. They question the safety and practicality of performing such maneuvers as simulated engine failure and autorotative landings during takeoffs and landings; settling with power; and demonstration of certain emergency procedures. They argue that the FAA inspector on a check ride may be inexperienced with the aircraft and, therefore, might not be able to ensure a safe recovery from these procedures. One **commenter** also notes that some insurance companies specifically exclude coverage of the aircraft if autorotative landings are involved. The **commenters** suggest that these maneuvers not be required during a check ride but, rather, that they be considered accomplished if there is an indication in the student’s log book by that student’s instructor pilot that the student has demonstrated adequate proficiency.

As mentioned in the discussion under § 61.127, the FAA agrees that settling with power should not be a requirement for any flight check. Therefore, the requirement of proposed Part 61, Appendix B IV(b), has also been changed so that the applicant need only demonstrate a recognition of and recover from imminent flight in the regime referred to as “settling descent with power.”

for cross-country flight for an airplane commercial certificate cannot be substituted for the helicopter cross-country flight requirement.

Another **commenter** objects to the aeronautical experience required of an applicant for a commercial pilot certificate with a gyroplane class rating. The FAA agrees with the **commenter** that the proposed minimum flight hours are excessive. The regulation as proposed would impose the same hour requirements for a gyroplane class rating as for a helicopter class rating: 50 hours of flight time in a gyroplane/helicopter; 15 hours of gyroplane/helicopter flight instruction time; and 35 hours of pilot-in-command time in a gyroplane helicopter. The **commenter** has operated under an exemption to the requirements contained in paragraphs (b)(3) and (4) since 1983. The exemption reduces the respective requirements for a gyroplane class rating to: 25 hours of flight time in a gyroplane; 10 hours of flight instruction in a gyroplane; and 15 hours of pilot-in-command time in a gyroplane. In granting this exemption, the FAA determined that the requirements could be reduced without adversely affecting safety. The FAA now reaffirms this finding and has amended § 61.131 (b) accordingly.

Ref: Proposal 454; Committee III.

Section 61.159 Rotorcraft rating: Aeronautical knowledge.

No public comments were received on § 61.159, and it is amended as proposed.

Section 61.161 Rotorcraft rating: Aeronautical experience.

Proposed § 61.161 (b)(4) is clarified by adding the word “performing” before the phrase “the duties of a pilot in command.” The remainder of § 61.161 is adopted as proposed.

Section 61.163 Rotorcraft rating: Aeronautical skill.

The portion of the proposed rule pertaining to an approved rotorcraft simulator or training device has been deleted. Helicopter simulation issues will be addressed in a separate rulemaking action.

Section 61.165 Rotorcraft rating: Additional category ratings. Part 61, Appendix A-Practical Test Requirements for Airplane Airline Transport Pilot Certificates and Associated Class and Type Ratings.

No public comments were received on § 61.165 or Appendix A. They are amended as proposed. Part 61, Appendix B-Practical Test Requirements for Rotorcraft Airline Transport Pilot Certificates with a Helicopter Class Rating and Associated Type Ratings.

The phrase “ground control approach” in proposed paragraph 11 l(c) has been changed to “surveillance or precision radar approach” to agree with the terminology used in the Airman’s Information Manual.

One **commenter** suggests that in paragraph I(d), the phrase “in accordance with operating limitations” be changed to “in accordance with the Rotorcraft Flight Manual procedures.” The **commenter** notes that power assurance procedures are not operating limitations and are placed in the Rotorcraft Flight Manual in the normal procedures or performance section. The comment is valid, and the language of the final rule has been changed accordingly.

The utility of requiring circling approaches as part of the practical test requirements for rotorcraft airline transport pilot certificates was the subject of another comment. The **commenter** suggests deleting Section 11 l(d) based on the view that a circle-to-land maneuver after completion of an instrument approach is remarkably simple and heard free.

The FAA does not accept this argument. Performing the circle-to-land maneuver after completion of an instrument approach procedure may not always be simpler in a helicopter than it is in an airplane, depending upon the airport environment, weather, and other traffic. A circling approach basically involves different procedures than straight-in approaches. It is, therefore, appropriate for the FAA to require a demonstrated proficiency in executing the maneuver.

A number of **commenters** strongly object to other maneuvers and procedures required for rotorcraft airline transport pilot ratings. They question the safety and practicality of performing such maneuvers as simulated engine failure and autorotative landings during takeoffs and landings; settling with power; and demonstration of certain emergency procedures. They argue that the FAA inspector on a check ride may be inexperienced with the aircraft and, therefore, might not be able to ensure a safe recovery from these procedures. One **commenter** also notes that some insurance companies specifically exclude coverage of the aircraft if autorotative landings are involved. The **commenters** suggest that these maneuvers not be required during a check ride but, rather, that they be considered accomplished if there is an indication in the student’s log book by that student’s instructor pilot that the student has demonstrated adequate proficiency.

As mentioned in the discussion under § 61.127, the FAA agrees that settling with power should not be a requirement for any flight check. Therefore, the requirement of proposed Part 61, Appendix B IV(b), has also been changed so that the applicant need only demonstrate a recognition of and recover from imminent flight in the regime referred to as “settling descent with power.”

The proposal in Notice No. 85-8 to reduce the ceiling and visibility requirement, however, has no such limitation of flight time as considered necessary by the report. In light of this evidence, the ceiling and visibility requirements for helicopters contained in paragraphs (b)(2)(i) and (ii) remain unchanged from the previous rule.

Ref: Proposals 483 and 484; Committee III.

Section 91.116 Takeoff and landing under *IFR*: General.

No unfavorable comments were received on the proposal to amend § 91.116 to establish a separate takeoff minimum of one-half mile visibility for helicopters. One commenter writing on this section recommends that takeoff minimums be established for all Part 91 operations as are landing minimums under this section. Such a suggestion is not a part of the rotorcraft review and is outside the scope of this rulemaking.

Ref: Proposal 494; Committee III.

Section 91.171 Altimeter system and altitude reporting equipment tests and inspections.

No comments were received on the proposed change to § 91.171, and the rule is amended as proposed.

Part 91, Appendix A—Category II Operations: Manual, Instruments, Equipment and Maintenance

One of the purposes of the Rotor 5 rulemaking was to enable rotorcraft to perform Category II operations. In the NPRM, changes that would have made this new authority possible were inadvertently omitted. These changes are now included in the final rule. In Part 91, Appendix A, this change has been accomplished by removing the word “airplane” and replacing it with the word “aircraft” wherever “airplane” appears.

Section 133.1 Applicability.

One comment was received regarding the rotorcraft external load operations requirements of paragraph (c)(4). The commenter suggests eliminating the requirement for a Rotorcraft External-Load Operator Certificate for customer acceptance flights. The commenter argues that it is not logical for the FAA to eliminate the requirements for a Rotorcraft External-Load Operator Certificate during the development phase and demonstration of compliance with requirements of Parts 27, 29, and 133 and continue to require a Rotorcraft External-Load Operator Certificate for customer acceptance flights. The FAA disagrees with the reasoning. When a manufacturer offers such rides to the public, a higher degree of safety should be required. These customer passengers have a right to know that the safety of the flight on which they are about to embark has been reviewed by the FAA. The language proposed for paragraph (cX4) is therefore adopted in the final rule.

Section 133.1(c)(5), as proposed, reiterated the exclusion of air carriers from rotorcraft external-load certification rules. The FAA has eliminated this exclusion from the final rule for the following reasons. The exclusion eliminates the applicability of all Subpart B. Contained within Subpart B is § 133.19(a)(2), which requires aircraft to meet certification requirements of Subpart D, including § 133.43, Structures and design. Similarly, neither § 133.21 nor § 133.23 would be applicable to air carrier operators conducting external-load operations. It would therefore be possible for a pilot who had met the proficiency and skill requirements under Part 135 to not have the experience, knowledge, and skill required to conduct safely and external-load operation under Part 133.

This is not the intent of the regulation. Air carrier and external-load operations are so dissimilar in function that a separate pilot certification process should be required of an air carrier when requesting external-load approval. For this reason, the proposed § 133.1(cX5) has been deleted from the final rule.

Regarding proposed § 133.1(cX6), one commenter suggests that only external-load operations conducted by a U.S. military organization for purely military purposes or for operations that cannot be conducted by a certificated commercial operator be exempt from the certification rules. The commenter cites a growing trend of use of public aircraft in competition with bona fide certificated commercial operators that is placing commercial operators at an alleged unfair disadvantage. The commenter further claims that when operations that could be performed by a commercial operator within the limits of his certificate are performed by the military, the public is entitled to the same level of safety. The commenter also suggests that the exclusion be removed from all other operators of public aircraft when conducting external-load operations.

In response to these suggested changes, the FAA notes that according to § 601 of the Federal Aviation Act of 1958, the Administrator is empowered to promote safety of flight of “civil aircraft,” defined in § 101(17) of the Act as “any aircraft other than a public aircraft.” Thus, public-use aircraft are, by definition, already excluded from § 133.1. The language of proposed § 133.1(c)(6) is not a change in existing regulations; it merely makes explicit the exclusion of public-use aircraft from applicability. The rule is adopted as proposed and renumbered as § 133.1(c)(5).

The proposal in Notice No. 85-8 to reduce the ceiling and visibility requirement, however, has no such limitation of flight time as considered necessary by the report. In light of this evidence, the ceiling and visibility requirements for helicopters contained in paragraphs (b)(2)(i) and (ii) remain unchanged from the previous rule.

Ref: Proposals 483 and 484; Committee III.

Section 91.116 Takeoff and landing under *IFR*: General.

No unfavorable comments were received on the proposal to amend § 91.116 to establish a separate takeoff minimum of one-half mile visibility for helicopters. One commenter writing on this section recommends that takeoff minimums be established for all Part 91 operations as are landing minimums under this section. Such a suggestion is not a part of the rotorcraft review and is outside the scope of this rulemaking.

Ref: Proposal 494; Committee III.

Section 91.171 Altimeter system and altitude reporting equipment tests and inspections.

No comments were received on the proposed change to § 91.171, and the rule is amended as proposed.

Part 91, Appendix A—Category II Operations: Manual, Instruments, Equipment and Maintenance

One of the purposes of the Rotor 5 rulemaking was to enable rotorcraft to perform Category II operations. In the NPRM, changes that would have made this new authority possible were inadvertently omitted. These changes are now included in the final rule. In Part 91, Appendix A, this change has been accomplished by removing the word “airplane” and replacing it with the word “aircraft” wherever “airplane” appears.

Section 133.1 Applicability.

One comment was received regarding the rotorcraft external load operations requirements of paragraph (c)(4). The commenter suggests eliminating the requirement for a Rotorcraft External-Load Operator Certificate for customer acceptance flights. The commenter argues that it is not logical for the FAA to eliminate the requirements for a Rotorcraft External-Load Operator Certificate during the development phase and demonstration of compliance with requirements of Parts 27, 29, and 133 and continue to require a Rotorcraft External-Load Operator Certificate for customer acceptance flights. The FAA disagrees with the reasoning. When a manufacturer offers such rides to the public, a higher degree of safety should be required. These customer passengers have a right to know that the safety of the flight on which they are about to embark has been reviewed by the FAA. The language proposed for paragraph (cX4) is therefore adopted in the final rule.

Section 133.1(c)(5), as proposed, reiterated the exclusion of air carriers from rotorcraft external-load certification rules. The FAA has eliminated this exclusion from the final rule for the following reasons. The exclusion eliminates the applicability of all Subpart B. Contained within Subpart B is § 133.19(a)(2), which requires aircraft to meet certification requirements of Subpart D, including § 133.43, Structures and design. Similarly, neither § 133.21 nor § 133.23 would be applicable to air carrier operators conducting external-load operations. It would therefore be possible for a pilot who had met the proficiency and skill requirements under Part 135 to not have the experience, knowledge, and skill required to conduct safely and external-load operation under Part 133.

This is not the intent of the regulation. Air carrier and external-load operations are so dissimilar in function that a separate pilot certification process should be required of an air carrier when requesting external-load approval. For this reason, the proposed § 133.1(cX5) has been deleted from the final rule.

Regarding proposed § 133.1(cX6), one commenter suggests that only external-load operations conducted by a U.S. military organization for purely military purposes or for operations that cannot be conducted by a certificated commercial operator be exempt from the certification rules. The commenter cites a growing trend of use of public aircraft in competition with bona fide certificated commercial operators that is placing commercial operators at an alleged unfair disadvantage. The commenter further claims that when operations that could be performed by a commercial operator within the limits of his certificate are performed by the military, the public is entitled to the same level of safety. The commenter also suggests that the exclusion be removed from all other operators of public aircraft when conducting external-load operations.

In response to these suggested changes, the FAA notes that according to § 601 of the Federal Aviation Act of 1958, the Administrator is empowered to promote safety of flight of “civil aircraft,” defined in § 101(17) of the Act as “any aircraft other than a public aircraft.” Thus, public-use aircraft are, by definition, already excluded from § 133.1. The language of proposed § 133.1(c)(6) is not a change in existing regulations; it merely makes explicit the exclusion of public-use aircraft from applicability. The rule is adopted as proposed and renumbered as § 133.1(c)(5).

of a special VFR clearance or otherwise specifically approved by the Administrator. The rationale is that an external-load operation conducted in IFR conditions within a control zone is viable and safe under the terms of a special VFR clearance.

The FAA does not agree. The conduct of an external-load operation in IFR conditions is of sufficiently high risk that the FAA reserves the right to approve each operation. In fact, to clarify that the rule applies to all operations conducted under IFR and not only those in IFR meteorological conditions, the final rule has been changed to read “under IFR” instead of “in IFR conditions.”

Finally, it should be noted that the operator has not been precluded from conducting operations under the terms of a special VFR clearance. However, approval from the Administrator will be required for a special VFR clearance to conduct external-load operations.

One commenter proposes the deletion of subparagraph (e) because, it is argued, § 91.119(d) specifically excludes helicopters from “hard numbers.” The FAA chooses not to delete this language because it serves as a clarification of the § 133.33 rules as they pertain to helicopter operations. The language of § 133.33 is consistent with § 91.119(d).

Section 133.35 Carriage of persons.

One commenter proposes the following addition to § 133.35(a): “(5) Is a person which forms a part of or is associated with a Class D external-load.”

This language is redundant with the provisions already in the rule. The language proposed in Notice No. 85-8 clearly permits a person to be associated with a Class D external-load. The final rule, therefore, is adopted as proposed.

There were a number of comments on § 133.35(b) regarding the persons to be carried as a Class D load and the distance over which they can be transported. One commenter states that there should be restrictions on how many persons should be carried at a time, suggesting that the number be limited to one. Others object to the carriage of any person in a hoist outside the aircraft for any distance.

In contrast, one commenter proposes an exclusion from paragraph (b) for those operations where persons are carried externally but are not intended to be hoisted inside the helicopter, such as the transfer of workers from a boat alongside a well-head to the well-head proper. Another commenter claims that it is too restrictive to limit a Class D load to one person, citing the successful experiments with 10-man Billy Pugh nets in rescue operations.

Proposed § 133.35(b) has been deleted on the basis that it is too restrictive to implement a blanket restriction on the number of persons carried as a Class D load and the distance over which these persons can be carried. Rather than specify limits in a regulation, the FAA will give appropriate guidance for Class D external-load operations to FAA district offices. The conditions under which an operator can carry persons externally will be included in that operator's approved Operations Specification. Proposed § 133.35(c) had been redesignated as § 133.35(b) in the final rule.

Proposal 532; Committee III.

Section 133.37 Crewmember training, currency, and testing requirements.

No public comments were received on § 133.37. However, there is a potentially confusing use of the terms “class” and “type” in paragraph (c) in conjunction with external-load operations. The operation referred to relates to a particular class of external-load operation in a particular type of aircraft. No class of aircraft is intended to be specified. Accordingly, the rule has been amended to clarify the intent. Also, the proposed requirement for testing within the past 12 calendar months has been deleted.

Section 133.41 Flight characteristics requirements.

No public comments were received on § 133.41, and it is adopted as proposed.

Section 133.45 Operating limitations.

One commenter notes that the proposed rule would eliminate all multiengine helicopters certificated under Part 27 and those certificated as Category B under Part 29 from conducting Class D operations. The FAA has considered this effect; however, the appropriate level of safety dictates a higher standard of airworthiness requirements for conducting Class D operations. Therefore, the rule requires multiengine Category A rotorcraft for Class D operations.

Section 133.47 Rotorcraft-load combination *flight* manual.

Section 133.51 Airworthiness certification.

Section 135.1 Applicability.

Section 135.23 Manual contents.

of a special VFR clearance or otherwise specifically approved by the Administrator. The rationale is that an external-load operation conducted in IFR conditions within a control zone is viable and safe under the terms of a special VFR clearance.

The FAA does not agree. The conduct of an external-load operation in IFR conditions is of sufficiently high risk that the FAA reserves the right to approve each operation. In fact, to clarify that the rule applies to all operations conducted under IFR and not only those in IFR meteorological conditions, the final rule has been changed to read “under IFR” instead of “in IFR conditions.”

Finally, it should be noted that the operator has not been precluded from conducting operations under the terms of a special VFR clearance. However, approval from the Administrator will be required for a special VFR clearance to conduct external-load operations.

One commenter proposes the deletion of subparagraph (e) because, it is argued, § 91.119(d) specifically excludes helicopters from “hard numbers.” The FAA chooses not to delete this language because it serves as a clarification of the § 133.33 rules as they pertain to helicopter operations. The language of § 133.33 is consistent with § 91.119(d).

Section 133.35 Carriage of persons.

One commenter proposes the following addition to § 133.35(a): “(5) Is a person which forms a part of or is associated with a Class D external-load.”

This language is redundant with the provisions already in the rule. The language proposed in Notice No. 85-8 clearly permits a person to be associated with a Class D external-load. The final rule, therefore, is adopted as proposed.

There were a number of comments on § 133.35(b) regarding the persons to be carried as a Class D load and the distance over which they can be transported. One commenter states that there should be restrictions on how many persons should be carried at a time, suggesting that the number be limited to one. Others object to the carriage of any person in a hoist outside the aircraft for any distance.

In contrast, one commenter proposes an exclusion from paragraph (b) for those operations where persons are carried externally but are not intended to be hoisted inside the helicopter, such as the transfer of workers from a boat alongside a well-head to the well-head proper. Another commenter claims that it is too restrictive to limit a Class D load to one person, citing the successful experiments with 10-man Billy Pugh nets in rescue operations.

Proposed § 133.35(b) has been deleted on the basis that it is too restrictive to implement a blanket restriction on the number of persons carried as a Class D load and the distance over which these persons can be carried. Rather than specify limits in a regulation, the FAA will give appropriate guidance for Class D external-load operations to FAA district offices. The conditions under which an operator can carry persons externally will be included in that operator's approved Operations Specification. Proposed § 133.35(c) had been redesignated as § 133.35(b) in the final rule.

Proposal 532; Committee III.

Section 133.37 Crewmember training, currency, and testing requirements.

No public comments were received on § 133.37. However, there is a potentially confusing use of the terms “class” and “type” in paragraph (c) in conjunction with external-load operations. The operation referred to relates to a particular class of external-load operation in a particular type of aircraft. No class of aircraft is intended to be specified. Accordingly, the rule has been amended to clarify the intent. Also, the proposed requirement for testing within the past 12 calendar months has been deleted.

Section 133.41 Flight characteristics requirements.

No public comments were received on § 133.41, and it is adopted as proposed.

Section 133.45 Operating limitations.

One commenter notes that the proposed rule would eliminate all multiengine helicopters certificated under Part 27 and those certificated as Category B under Part 29 from conducting Class D operations. The FAA has considered this effect; however, the appropriate level of safety dictates a higher standard of airworthiness requirements for conducting Class D operations. Therefore, the rule requires multiengine Category A rotorcraft for Class D operations.

Section 133.47 Rotorcraft-load combination *flight* manual.

Section 133.51 Airworthiness certification.

Section 135.1 Applicability.

Section 135.23 Manual contents.

aircraft. The commenter does not agree with the argument that remote area operations require unique and innovative accommodations to allow a pilot to perform such inspections on helicopters.

The FAA disagrees. The pilot training under the regulations for utilization of this section requires the same level of competency as an inspector at the home base to ensure safety in all circumstances, particularly in the unique situations that may arise at "remote" localities. In addition, the remaining requirements of this section ensure that the procedures developed for this situation are tightly controlled. Another commenter suggests that "remote areas" be further defined. This issue has been discussed in conjunction with the proposal affecting § 43.3. Section 135.429(d) is adopted as proposed.

Ref: Proposal 568; Committee III.

Economic Summary

The revised rules are expected to have immediate economic impact. All costs and savings data have been inflated* to 1985 dollars from the original 1982 dollars data appearing in the regulatory analysis for the NPRM. These data were derived by the FAA from estimates of industry conditions in late 1981 obtained by research on representative operator groups (operating under Parts 91, 133, 135, 137 and 141), which comprise the rotorcraft industry. A 5 percent profit margin factor was used to derive increased profits and lost profits from revenue increases or decreases, respectively. Cost savings are presumed to increase profits by an equal amount.

The 43 regulatory changes in Notice No. 85-8, which were determined to have a negligible or no technical impact, and consequently a negligible or no economic impact, are listed in Table 2, "Rotorcraft Regulatory Review Program Notice No. 85-8 Rule Changes Having Negligible Or No Economic Impact." Many of these changes are either editorial or clang in nature. In addition, some changes incorporate into regulations what has become the current practice of the FAA or industry. The assessment of their economic impacts is based on current industry practice, agency experience, and the explanations given under each rule change in the preamble for this rule. No estimates of specific costs or savings are made for these groups of proposals, and the proposed changes are not further discussed in the economic evaluation except where referenced in the table to Appendix A. Additional discussion to that given in the preamble for those eight referenced changes is given in Appendix A of the Regulatory Evaluation.

The remaining operation and maintenance changes in Notice No. 85-8 are determined to have an impact, but the impact is not considered to be major under the procedures and criteria prescribed by Executive Order 12291 or significant under the Department of Transportation Regulatory Policies and Procedures (46 FR 11034; February 26, 1979), and the changes will not have a significant economic impact on a substantial number of small entities. A discussion of and tables for the benefits and costs (savings) of the eight changes shown in Table 1 and a regulatory flexibility determination for the Impacts on small business entities for each of the four changes having an adverse economic impact are presented below.

(See P-84 and P-85 for Tables 1 and 2.) Ch. 12 ¶

*The Department of Commerce's December 1985 implicit price deflator for the period 1982-1985 was used to inflate the costs and savings data for this analysis.

aircraft. The commenter does not agree with the argument that remote area operations require unique and innovative accommodations to allow a pilot to perform such inspections on helicopters.

The FAA disagrees. The pilot training under the regulations for utilization of this section requires the same level of competency as an inspector at the home base to ensure safety in all circumstances, particularly in the unique situations that may arise at "remote" localities. In addition, the remaining requirements of this section ensure that the procedures developed for this situation are tightly controlled. Another commenter suggests that "remote areas" be further defined. This issue has been discussed in conjunction with the proposal affecting § 43.3. Section 135.429(d) is adopted as proposed.

Ref: Proposal 568; Committee III.

Economic Summary

The revised rules are expected to have immediate economic impact. All costs and savings data have been inflated* to 1985 dollars from the original 1982 dollars data appearing in the regulatory analysis for the NPRM. These data were derived by the FAA from estimates of industry conditions in late 1981 obtained by research on representative operator groups (operating under Parts 91, 133, 135, 137 and 141), which comprise the rotorcraft industry. A 5 percent profit margin factor was used to derive increased profits and lost profits from revenue increases or decreases, respectively. Cost savings are presumed to increase profits by an equal amount.

The 43 regulatory changes in Notice No. 85-8, which were determined to have a negligible or no technical impact, and consequently a negligible or no economic impact, are listed in Table 2, "Rotorcraft Regulatory Review Program Notice No. 85-8 Rule Changes Having Negligible Or No Economic Impact." Many of these changes are either editorial or clang in nature. In addition, some changes incorporate into regulations what has become the current practice of the FAA or industry. The assessment of their economic impacts is based on current industry practice, agency experience, and the explanations given under each rule change in the preamble for this rule. No estimates of specific costs or savings are made for these groups of proposals, and the proposed changes are not further discussed in the economic evaluation except where referenced in the table to Appendix A. Additional discussion to that given in the preamble for those eight referenced changes is given in Appendix A of the Regulatory Evaluation.

The remaining operation and maintenance changes in Notice No. 85-8 are determined to have an impact, but the impact is not considered to be major under the procedures and criteria prescribed by Executive Order 12291 or significant under the Department of Transportation Regulatory Policies and Procedures (46 FR 11034; February 26, 1979), and the changes will not have a significant economic impact on a substantial number of small entities. A discussion of and tables for the benefits and costs (savings) of the eight changes shown in Table 1 and a regulatory flexibility determination for the Impacts on small business entities for each of the four changes having an adverse economic impact are presented below.

(See P-84 and P-85 for Tables 1 and 2.) Ch. 12 ¶

*The Department of Commerce's December 1985 implicit price deflator for the period 1982-1985 was used to inflate the costs and savings data for this analysis.

Table 2
Rotorcraft Regulatory Review Program
Notice No. 85-8 Rule Changes Having Negligible
Or No Economic Impact

	FAR Section	Economic Impact
FAR Part	1.1	No impact-definition
FAR Part 43	43.3	Impact considered with Part 43 Appendix A
	43.15	Negligible costs
FAR Part 45	45.14	Negligible costs (Also see Appendix A in this evaluation)
FAR Part 61	61.55	Negligible costs (Also see Appendix A in this evaluation)
	61.57	No impact-clarification
	61.87	Negligible costs
	61.105	Negligible costs
	61.107	Negligible costs
	61.113	Negligible costs (Also see Appendix A in this evaluation)
	61.125	Negligible costs
	61.127	No impact
	61.131	Negligible costs (Also see Appendix A in this evaluation)
	61.159	Negligible costs
	61.161	Negligible savings
61.163	Negligible costs (Also see Appendix A in this evaluation)	
	61.165	No impact
	Appendix A	No impact-clarification
	Appendix B	Negligible costs (Also see Appendix A in this evaluation)
FAR Part 91	91.2	No impact
	91.116	Negligible savings
	91.171	Negligible costs
FAR Part 133	133.1	Negligible savings
	133.11	No impact-clarification
	133.13	No impact-clarification
	133.23	Negligible savings
	133.25	No impact—clarification (see 133.51)
	133.27	No impact-clarification (see 133.25)
	133.31	No impact-clarification 133.33 No impact-clarification
	133.35	Negligible savings
	133.37	No impact---optional standard-see 133.1 (Also see Appendix A in this evaluation)
	133.39	No impact
	133.45	Negligible savings
	133.47	No impact-clarification (see 133.45)
FAR Part 135	135.1	Negligible savings
	135.23	No impact-clarification
	135.39	Negligible savings
	135.117	Negligible savings
	135.167	Negligible costs (Also see Appendix A in this evaluation)
	135.181	Negligible savings
	135.223	Negligible savings
	135.227	No impact-clarification

Benefits and Costs (Savings)

In addition to editorial changes to the clarification of the present regulations, benefits are likely to accrue from other changes in this notice. Five changes (Part 43, Appendix A; § 91.167; § 133.21; § 133.41; and § 133.51) will provide operational and maintenance cost savings to Part 91, 133, and/or 135 operators. Three changes will cause incurring of new costs. One of these, § 135.429, has an initial one-time cost but will provide a net annual cost decrease through relieved inspection work requirements. The other two, §§ 135.159 and 135.173, increase passenger safety. The costs of these will impact Part 135 operators currently provided relief from the present regulations by using Exemption 2695B.

For a complete discussion of the above, see the copy of the economic evaluation in the Docket, or request a copy from the individual listed under "FOR FURTHER INFORMATION CONTACT."

Table 2
Rotorcraft Regulatory Review Program
Notice No. 85-8 Rule Changes Having Negligible
Or No Economic Impact

	FAR Section	Economic Impact
FAR Part	1.1	No impact-definition
FAR Part 43	43.3	Impact considered with Part 43 Appendix A
	43.15	Negligible costs
FAR Part 45	45.14	Negligible costs (Also see Appendix A in this evaluation)
FAR Part 61	61.55	Negligible costs (Also see Appendix A in this evaluation)
	61.57	No impact-clarification
	61.87	Negligible costs
	61.105	Negligible costs
	61.107	Negligible costs
	61.113	Negligible costs (Also see Appendix A in this evaluation)
	61.125	Negligible costs
	61.127	No impact
	61.131	Negligible costs (Also see Appendix A in this evaluation)
	61.159	Negligible costs
	61.161	Negligible savings
61.163	Negligible costs (Also see Appendix A in this evaluation)	
	61.165	No impact
	Appendix A	No impact-clarification
	Appendix B	Negligible costs (Also see Appendix A in this evaluation)
FAR Part 91	91.2	No impact
	91.116	Negligible savings
	91.171	Negligible costs
FAR Part 133	133.1	Negligible savings
	133.11	No impact-clarification
	133.13	No impact-clarification
	133.23	Negligible savings
	133.25	No impact—clarification (see 133.51)
	133.27	No impact-clarification (see 133.25)
	133.31	No impact-clarification 133.33 No impact-clarification
	133.35	Negligible savings
	133.37	No impact---optional standard-see 133.1 (Also see Appendix A in this evaluation)
	133.39	No impact
	133.45	Negligible savings
	133.47	No impact-clarification (see 133.45)
FAR Part 135	135.1	Negligible savings
	135.23	No impact-clarification
	135.39	Negligible savings
	135.117	Negligible savings
	135.167	Negligible costs (Also see Appendix A in this evaluation)
	135.181	Negligible savings
	135.223	Negligible savings
	135.227	No impact-clarification

Benefits and Costs (Savings)

In addition to editorial changes to the clarification of the present regulations, benefits are likely to accrue from other changes in this notice. Five changes (Part 43, Appendix A; § 91.167; § 133.21; § 133.41; and § 133.51) will provide operational and maintenance cost savings to Part 91, 133, and/or 135 operators. Three changes will cause incurring of new costs. One of these, § 135.429, has an initial one-time cost but will provide a net annual cost decrease through relieved inspection work requirements. The other two, §§ 135.159 and 135.173, increase passenger safety. The costs of these will impact Part 135 operators currently provided relief from the present regulations by using Exemption 2695B.

For a complete discussion of the above, see the copy of the economic evaluation in the Docket, or request a copy from the individual listed under "FOR FURTHER INFORMATION CONTACT."

§ 135.159 Equipment requirements:

Carrying passengers under *VFR* at night or under *VFR* over-the-top conditions.

This rule requires that, for § 135.159, FAA Exemption No. 2695B be rescinded. The exemption permits the operation of rotorcraft with a maximum certificated takeoff weight of 6,000 pounds or less at night under *VFR* without the following instruments:

- (a) Slip skid indicator;
- (b) Gyroscopic bank and pitch (attitude) indicator; and
- (c) Gyroscopic direction (heading) indicator.

An estimated 254 small operators conduct night operations and have one or more of the subject size aircraft in their fleet. Of these 254 operators, an estimated 104 would be directly affected by removal of the exemption. However, further industry research indicates that of the 120 operators who use the exemption, only 59 will experience an annualized cost greater than \$3,300 when the exemption is removed. Because these 59 operators comprise only 23 percent of the 254 operators who are subject to the proposed regulation (they fly at night), a regulatory flexibility analysis is not required for removal of Exemption No. 2695F from the requirements of § 135.159.

In addition to the above economic impacts, the final rule is expected to have beneficial effects on many small businesses. These also are discussed in detail in the Regulatory Flexibility Analysis contained in Appendix B of the Regulatory Evaluation which has been placed in the docket. A summary of these beneficial effects follows.

§ 133.21 Personnel.

The objective of these rules is to eliminate external-load accidents due to pilot competence in performing particular operations. Two methods of ensuring such pilot competence (which can be combined) are to require experience, such as through a "trainee" pilot working a certain amount of time with a "qualified" pilot, and through pilot testing by a qualified examiner. The proposal would permit pilot testing to be carried out by FAA employees, designated examiners, or individuals within the particular company performing the external-load operation. Present regulations provide for such test only by the Chief Pilot.

An estimated 19 external-load operators are potentially affected by this rule. Almost all may be assumed to be small. Benefits may be considered roughly proportional to fleet size, although variations may be expected due to operating territory and other factors. Therefore, to the extent that small operators have smaller fleets than large ones, the \$481,000 projected annual cost savings may be expected to average no more than \$2,687 per affected operator.

Industry research indicates that over 40 percent of Part 133 certificate holders also hold Part 135 certificates. The total fleet size distribution of Part 133 operators is unknown. Regardless of whether or not it resembles the distribution of the Part 135 fleet. The relatively high maximum average impact suggests that the threshold of economic impact significance could very -veil be exceeded by on-third of the potentially affected small operators.

§ 133.41 Flight characteristics requirements.

The objective of these rules is to reduce accidents resulting from the use of particular combinations of rotorcraft models with certain external loads and external-load attaching devices. Many such combinations of rotorcraft models, external loads, and external-load attaching devices pose a significant risk of accident even when under the control of a competent pilot. The FAA concludes that confidence in the external-load operation can only be maintained then each possible rotorcraft-load combination is successfully demonstrated at least once.

An estimated 164 external-load rotorcraft operators are potentially affected by this rule. Almost all may be considered small. Benefits may be considered roughly proportional to fleet size, although variations may be expected due to fleet diversity and other factors. Therefore, to the extent that small operators have smaller fleets than large ones, the \$340,000 projected annual cost savings and \$2,000 annual profit increase for all affected carriers combined may be expected to be no greater than \$2,085 per potentially affected small operator, on average.

As stated previously, industry research indicates that somewhat over 40 percent of Part 133 certificate holders also hold Part 135 certificates. The size of the average impact, however, suggests that the threshold of economic impact significance could well be exceeded by one-third of the potentially affected small operators. Section 133.41 is closer to the borderline in this regard than § 133.21.

Cumulative Economic Impact

The changes to Part 43, Appendix A, and §§ 91.23, 133.21, 133.41, 133.51, 135.169, 135.173 and 135.429 refer to different, but partially overlapping, categories of operators. The following eight changes are considered to have overlapping impacts:

- (1) Part 43, Appendix A-Part 135 operators serving remote areas.
- (2) Section 91.23-Part 91 operators (not holding Part 135 certificates) flying to some extent under IFR.
- (3) Section 133.21-Part 133 operators in general.
- (4) Section 133.41-Part 133 operators in general.
- (5) Section 133.51-Part 133 operators in general.
- (6) Section 135.159-Part 135 operators flying to some extent VFR at night.
- (7) Section 135.173-Part 135 operators using rotorcraft with 10 seats or more.
- (8) Section 135.429-Part 135 operators using rotorcraft with 10 seats or more.

Although the first and second categories are, by definition, separate from each other, there exists no operator survey data that would allow the determination or reliable estimation of the actual extent to which each of the other categories overlaps. It is possible to estimate, however, whether or not it is likely that the number of operators experiencing a significant cumulative net economic impact (beneficial or detrimental) from all eight of these rules would constitute one-third or more of the total of individual potentially affected operators, given the (separate) distributions of fleet size for Part 135 and non-Part 135 operators. The determination can be made by assuming operator impact is proportional to operator fleet size. The total of individual operators potentially affected by any of the rules may be estimated as follows:

Part 135 operators, including all In proposal categories (1), (6), (7), and (8), and 42 percent of those in categories (3), (4), and (5). Note: It is estimated that 42.4 percent of Part 133 operators also hold Part 135 certificates	358
Non-Part 135 certificate holders, including 57.6 percent of those in proposal categories (3), (4), and (5)	393
Total	751

This estimate maximizes the extent of “overlapping” among relevant categories and increases the chance of one-third or more of the total individual operators’ experiencing a scant cumulative net impact. This is the case because some of the overlapping considered above is not necessarily the most likely representation of actual practice. For example, Part 91 operators that fly under IFR may well not also engage in Part 133 operations, which are generally carried out under VFR.

Even with maximum overlapping of potentially affected small operator categories and given the relatively large number of non-Part 135, and even Part 135, operators that have single-craft or very small fleets, and estimated 217 out of 751 would be expected to bear a significant cumulative impact from the eight rules. The remaining 534 would not be significantly impacted. The number of small operators expected to be impacted would be less than one-third of the total of such operators unless at least 120 of those operators were eliminated by being designated “large” operators. Therefore, it is reasonable to expect that the cumulative net economic impact (beneficial or detrimental) of these rules would not reach significant levels for one-third or more potentially affected small operators.

The determination is sensitive to assumptions made concerning (1) the number of proposal category (2) operators eliminated as “large” entities, and (3) the fleet size of “small operators.”

Conclusion

A final regulatory flexibility analysis is not required for the revisions being made to §§ 135.159, 135.173, and 135.429. For each of the revisions, the annualized cost is not greater than \$3,300 for more than one-third of the operators who would be affected by the revised regulation. In view of the above, the regulatory changes herein will not have a significant economic impact on a substantial number of small entities.

Reporting and Recordkeeping Requirements

The reporting and recordkeeping requirements contained In this amendment have previously been approved by the Office of Management and Budget and have been assigned Control No. 2120-0044.

Cumulative Economic Impact

The changes to Part 43, Appendix A, and §§ 91.23, 133.21, 133.41, 133.51, 135.169, 135.173 and 135.429 refer to different, but partially overlapping, categories of operators. The following eight changes are considered to have overlapping impacts:

- (1) Part 43, Appendix A-Part 135 operators serving remote areas.
- (2) Section 91.23-Part 91 operators (not holding Part 135 certificates) flying to some extent under IFR.
- (3) Section 133.21-Part 133 operators in general.
- (4) Section 133.41-Part 133 operators in general.
- (5) Section 133.51-Part 133 operators in general.
- (6) Section 135.159-Part 135 operators flying to some extent VFR at night.
- (7) Section 135.173-Part 135 operators using rotorcraft with 10 seats or more.
- (8) Section 135.429-Part 135 operators using rotorcraft with 10 seats or more.

Although the first and second categories are, by definition, separate from each other, there exists no operator survey data that would allow the determination or reliable estimation of the actual extent to which each of the other categories overlaps. It is possible to estimate, however, whether or not it is likely that the number of operators experiencing a significant cumulative net economic impact (beneficial or detrimental) from all eight of these rules would constitute one-third or more of the total of individual potentially affected operators, given the (separate) distributions of fleet size for Part 135 and non-Part 135 operators. The determination can be made by assuming operator impact is proportional to operator fleet size. The total of individual operators potentially affected by any of the rules may be estimated as follows:

Part 135 operators, including all In proposal categories (1), (6), (7), and (8), and 42 percent of those in categories (3), (4), and (5). Note: It is estimated that 42.4 percent of Part 133 operators also hold Part 135 certificates	358
Non-Part 135 certificate holders, including 57.6 percent of those in proposal categories (3), (4), and (5)	393
Total	751

This estimate maximizes the extent of “overlapping” among relevant categories and increases the chance of one-third or more of the total individual operators’ experiencing a scant cumulative net impact. This is the case because some of the overlapping considered above is not necessarily the most likely representation of actual practice. For example, Part 91 operators that fly under IFR may well not also engage in Part 133 operations, which are generally carried out under VFR.

Even with maximum overlapping of potentially affected small operator categories and given the relatively large number of non-Part 135, and even Part 135, operators that have single-craft or very small fleets, and estimated 217 out of 751 would be expected to bear a significant cumulative impact from the eight rules. The remaining 534 would not be significantly impacted. The number of small operators expected to be impacted would be less than one-third of the total of such operators unless at least 120 of those operators were eliminated by being designated “large” operators. Therefore, it is reasonable to expect that the cumulative net economic impact (beneficial or detrimental) of these rules would not reach significant levels for one-third or more potentially affected small operators.

The determination is sensitive to assumptions made concerning (1) the number of proposal category (2) operators eliminated as “large” entities, and (3) the fleet size of “small operators.”

Conclusion

A final regulatory flexibility analysis is not required for the revisions being made to §§ 135.159, 135.173, and 135.429. For each of the revisions, the annualized cost is not greater than \$3,300 for more than one-third of the operators who would be affected by the revised regulation. In view of the above, the regulatory changes herein will not have a significant economic impact on a substantial number of small entities.

Reporting and Recordkeeping Requirements

The reporting and recordkeeping requirements contained In this amendment have previously been approved by the Office of Management and Budget and have been assigned Control No. 2120-0044.

direct threat to air commerce. This threat was a basis for the FAA adopting § 91.12 of the FAR, which provides that no person may operate a civil aircraft within the United States with knowledge that narcotic drugs, marijuana, and depressant or stimulant drugs are carried in the aircraft, unless authorized under Federal or State law. During several meetings, the FAA and Customs representatives focused on actions required to develop more effective means to reconcile specific drug enforcement problems involving aircraft. In a July 11, 1985, letter to the FAA, the Assistant Secretary of the Department of Treasury outlined and proposed the specific regulatory amendments which Customs considered to be necessary to assist it in curbing use of aircraft carrying illegal substances and to identify those aircraft which may be used for drug smuggling. Customs believes that their proposed amendments represent a significant step toward curbing the use of aircraft for drug smuggling. The proposed amendments are based on the increase in illegal drug importation by aircraft and on the value to law enforcement officials of positive identification of all aircraft including those aircraft which may be involved in such activities. The problems identified by Customs include:

1. Positive air-to-air identification of aircraft penetrating an ADIZ or DEWIZ is hindered by the difficult-to-read 3-inch identification marks displayed on some of these aircraft;
2. Aircraft with identification (I.D.) plates which cannot readily be seen hamper the prompt identification of stolen or falsely numbered aircraft; and
3. Inability to readily verify unapproved aircraft modifications involving unauthorized fuel tanks in the passenger compartment or a baggage compartment because the records for approved aircraft modifications are not required to be kept aboard the aircraft.

On July 3, 1986, the FAA issued Notice of Proposed Rulemaking (NPRM) No. 86-9 (51 FR 25174; July 10, 1986) proposing responses to these three problems raised by Customs.

Registration Numbers

As discussed in the notice, Customs and other law enforcement groups, in combating drug trafficking by air, frequently must attempt to identify, from a high-performance aircraft, a small low-performance aircraft including aircraft suspected of being used in the illegal activity. Often these operations must be performed at night using special devices and capabilities to enhance identification and to apprehend smugglers. Many of the suspected aircraft have small, 3-inch nationality and registration marks (N-numbers) which are difficult to see or detect when attempting air-to-air identification. This requires maneuvering relatively close to these aircraft so that positive identification can be made. The use of larger registration marks makes identification easier and results in safer operation by maintaining a larger (up to six times greater) separation between the aircraft.

Customs has found that many aircraft flying into the United States display the small, 3-inch marks, making it difficult to identify aircraft, including suspect aircraft. The vast majority of the suspected aircraft, which are not limited to a particular type of aircraft, pass through an ADIZ or DEWIZ prior to entering the United States. It is these aircraft for which Customs, or other law enforcement or military organizations, are likely to attempt air-to-air identification.

Identification Plates

The FAA has adopted several related amendments concerning I.D. plates based on the needs and comments of the aviation community. Section 45.11 of the FAR was changed by Amendment 45-3 (52 FR 187; January 10, 1967) to require the I.D. plate to be in an accessible location "near an entrance," not necessarily an *external* location, to allow for maximum I.D. plate protection and to facilitate normal aircraft inspection. Based on information presented by small aircraft manufacturers, the FAA again changed § 45.11 of the FAR by adopting Amendment 45-7 (33 FR 14402; September 25, 1968) to provide an optional location for an aircraft I.D. plate. Under this option, the I.D. plate may be affixed permanently on the exterior of the fuselage near the tail surfaces, if it is legible to an observer on the ground. Additionally, FAA Advisory Circular AC 45-2, Identification and Registration Markings, which provides guidance and information concerning the identification and marking requirements for aircraft, includes a provision that, if under certain conditions the I.D. plate had to be covered or enclosed in any manner, its accessibility is considered acceptable if it can be revealed without the use of tools.

The Customs Service indicates that when investigating aircraft, including those suspected of being used for smuggling, it is difficult to determine quickly whether the FAA assigned N-number is displayed appropriately on the aircraft. Furthermore, false numbers may be used on stolen aircraft, which frequently are used for smuggling. Cross-checking the N-number with the I.D. plate data, which is an integral part of identification for the aircraft, assists in determining whether the N-number is false. The I.D. plates for many aircraft, however, are located in the aircraft interior so that they cannot be read from outside the aircraft, making it difficult for investigators to make an on-the-spot check of a suspected

direct threat to air commerce. This threat was a basis for the FAA adopting § 91.12 of the FAR, which provides that no person may operate a civil aircraft within the United States with knowledge that narcotic drugs, marijuana, and depressant or stimulant drugs are carried in the aircraft, unless authorized under Federal or State law. During several meetings, the FAA and Customs representatives focused on actions required to develop more effective means to reconcile specific drug enforcement problems involving aircraft. In a July 11, 1985, letter to the FAA, the Assistant Secretary of the Department of Treasury outlined and proposed the specific regulatory amendments which Customs considered to be necessary to assist it in curbing use of aircraft carrying illegal substances and to identify those aircraft which may be used for drug smuggling. Customs believes that their proposed amendments represent a significant step toward curbing the use of aircraft for drug smuggling. The proposed amendments are based on the increase in illegal drug importation by aircraft and on the value to law enforcement officials of positive identification of all aircraft including those aircraft which may be involved in such activities. The problems identified by Customs include:

1. Positive air-to-air identification of aircraft penetrating an ADIZ or DEWIZ is hindered by the difficult-to-read 3-inch identification marks displayed on some of these aircraft;
2. Aircraft with identification (I.D.) plates which cannot readily be seen hamper the prompt identification of stolen or falsely numbered aircraft; and
3. Inability to readily verify unapproved aircraft modifications involving unauthorized fuel tanks in the passenger compartment or a baggage compartment because the records for approved aircraft modifications are not required to be kept aboard the aircraft.

On July 3, 1986, the FAA issued Notice of Proposed Rulemaking (NPRM) No. 86-9 (51 FR 25174; July 10, 1986) proposing responses to these three problems raised by Customs.

Registration Numbers

As discussed in the notice, Customs and other law enforcement groups, in combating drug trafficking by air, frequently must attempt to identify, from a high-performance aircraft, a small low-performance aircraft including aircraft suspected of being used in the illegal activity. Often these operations must be performed at night using special devices and capabilities to enhance identification and to apprehend smugglers. Many of the suspected aircraft have small, 3-inch nationality and registration marks (N-numbers) which are difficult to see or detect when attempting air-to-air identification. This requires maneuvering relatively close to these aircraft so that positive identification can be made. The use of larger registration marks makes identification easier and results in safer operation by maintaining a larger (up to six times greater) separation between the aircraft.

Customs has found that many aircraft flying into the United States display the small, 3-inch marks, making it difficult to identify aircraft, including suspect aircraft. The vast majority of the suspected aircraft, which are not limited to a particular type of aircraft, pass through an ADIZ or DEWIZ prior to entering the United States. It is these aircraft for which Customs, or other law enforcement or military organizations, are likely to attempt air-to-air identification.

Identification Plates

The FAA has adopted several related amendments concerning I.D. plates based on the needs and comments of the aviation community. Section 45.11 of the FAR was changed by Amendment 45-3 (52 FR 187; January 10, 1967) to require the I.D. plate to be in an accessible location "near an entrance," not necessarily an *external* location, to allow for maximum I.D. plate protection and to facilitate normal aircraft inspection. Based on information presented by small aircraft manufacturers, the FAA again changed § 45.11 of the FAR by adopting Amendment 45-7 (33 FR 14402; September 25, 1968) to provide an optional location for an aircraft I.D. plate. Under this option, the I.D. plate may be affixed permanently on the exterior of the fuselage near the tail surfaces, if it is legible to an observer on the ground. Additionally, FAA Advisory Circular AC 45-2, Identification and Registration Markings, which provides guidance and information concerning the identification and marking requirements for aircraft, includes a provision that, if under certain conditions the I.D. plate had to be covered or enclosed in any manner, its accessibility is considered acceptable if it can be revealed without the use of tools.

The Customs Service indicates that when investigating aircraft, including those suspected of being used for smuggling, it is difficult to determine quickly whether the FAA assigned N-number is displayed appropriately on the aircraft. Furthermore, false numbers may be used on stolen aircraft, which frequently are used for smuggling. Cross-checking the N-number with the I.D. plate data, which is an integral part of identification for the aircraft, assists in determining whether the N-number is false. The I.D. plates for many aircraft, however, are located in the aircraft interior so that they cannot be read from outside the aircraft, making it difficult for investigators to make an on-the-spot check of a suspected

45 do not penetrate these zones and thus pose no problem at this time. Those aircraft with smaller marks operating solely within one of these zones, e.g., the Alaska DEWIZ or ADIZ, also will not be affected if they do not depart and reenter (penetrate) the zone.

B. Change I.D. Plate Location

§ 45.11

This amendment requires that all aircraft display an I.D. plate, as specified by § 45.11(a), on the aircraft fuselage exterior surface, in a location legible to an observer on the ground. It must be located adjacent to and aft of the rear-most entrance door or on the exterior surface near the tail. An aircraft I.D. plate affixed in an easily accessible area, legible to an observer on the ground, facilitates verification of aircraft identification by FAA inspectors, Customs investigators, and other law enforcement officials. The amendment provides for ready access to the I.D. plate data without having to enter the aircraft. It makes the I.D. plate information and N-number available simultaneously to provide a cross reference to help determine whether the aircraft may have been stolen or to determine if the registration number has been falsified. It also facilitates FAA inspectors' identification of aircraft for verification of maintenance, modification, and other airworthiness requirements to assure safe aircraft operation.

This amendment is not retroactive since this could result in a major change which would pose an undue burden on many aircraft owners. For example, if the I.D. plates currently affixed to aircraft, as required, were to be removed (i.e., repositioned) from the existing locations, this could result in damage to the aircraft and I.D. plate, and might require burdensome engineering and manufacturing changes such as structural, interior or exterior repair, or repainting.

As a cost-saving alternative for aircraft manufactured prior to 90 days after the effective date of this amendment, this final rule allows the display of just the model designation and builder's serial number on the fuselage exterior, adjacent to and aft of the rear-most entrance. This may be done if the identification plate is secured at an accessible exterior or interior location near an entrance. The model designation and serial number are required to be affixed in such a manner that they are not likely to be defaced or removed during normal service. Unlike the required fireproof I.D. plate, this "supplemental" identification does not have to be affixed in a manner such that it is not likely to be lost or destroyed in an accident. Thus, the data may be affixed in a relatively low-cost manner, such as by painting or decal.

C. Illegal Fuel Tank Installation

Part 43, Appendix B(a) and (d); § 91.27(c); and § 91.173(a) and (d)

This amendment requires that all affected aircraft modified with additional fuel tanks in the passenger or a baggage compartment, under Part 43 of the FAR, physically have on board the aircraft a copy of the required FAA Form 337. This includes aircraft previously not required to have an FAA Form 337 for fuel tank installations when operating with a special flight permit for the purpose of delivery or export. This amendment also requires that the owner or operator of an aircraft with such fuel tanks present the FAA Form 337 for inspection by any law enforcement officer.

This amendment provides one means for FAA, Customs, and other investigators to quickly obtain evidence as to whether the additional tanks in the aircraft are authorized or possibly illegally installed. Enforcement action can then be taken by the FAA and the appropriate agency against persons operating such aircraft. Action can also be taken to prevent the aircraft from being flown. This rule makes it possible for Customs to concentrate interdiction efforts on those aircraft modified with unauthorized fuel tank installations and which are possibly being used for illegal drug trafficking. By limiting this rule to aircraft modified with fuel tanks in the passenger or baggage compartments, which requires an FAA Form 337 under Part 43, operators of aircraft with FAA-approved extended-range fuel tanks located elsewhere in the aircraft (e.g., wing tip tanks) would not be required to keep that authorization on board the aircraft.

DISCUSSION OF COMMENTS:

General

Eight commenters, representing the views of the aviation community, participated in this rulemaking. Comments were submitted by individual pilots and owners and operators of aircraft including representatives of some aviation and aircraft manufacturers associations. Generally, the commenters support Customs' objective to stop the flow of illegal drugs into the United States by air. However, most commenters disagree as to what amendments should be adopted and who should comply with them. Some commenters disagree with all the amendments or recommend proposals which are outside the scope of the NPRM.

45 do not penetrate these zones and thus pose no problem at this time. Those aircraft with smaller marks operating solely within one of these zones, e.g., the Alaska DEWIZ or ADIZ, also will not be affected if they do not depart and reenter (penetrate) the zone.

B. Change I.D. Plate Location

§ 45.11

This amendment requires that all aircraft display an I.D. plate, as specified by § 45.11(a), on the aircraft fuselage exterior surface, in a location legible to an observer on the ground. It must be located adjacent to and aft of the rear-most entrance door or on the exterior surface near the tail. An aircraft I.D. plate affixed in an easily accessible area, legible to an observer on the ground, facilitates verification of aircraft identification by FAA inspectors, Customs investigators, and other law enforcement officials. The amendment provides for ready access to the I.D. plate data without having to enter the aircraft. It makes the I.D. plate information and N-number available simultaneously to provide a cross reference to help determine whether the aircraft may have been stolen or to determine if the registration number has been falsified. It also facilitates FAA inspectors' identification of aircraft for verification of maintenance, modification, and other airworthiness requirements to assure safe aircraft operation.

This amendment is not retroactive since this could result in a major change which would pose an undue burden on many aircraft owners. For example, if the I.D. plates currently affixed to aircraft, as required, were to be removed (i.e., repositioned) from the existing locations, this could result in damage to the aircraft and I.D. plate, and might require burdensome engineering and manufacturing changes such as structural, interior or exterior repair, or repainting.

As a cost-saving alternative for aircraft manufactured prior to 90 days after the effective date of this amendment, this final rule allows the display of just the model designation and builder's serial number on the fuselage exterior, adjacent to and aft of the rear-most entrance. This may be done if the identification plate is secured at an accessible exterior or interior location near an entrance. The model designation and serial number are required to be affixed in such a manner that they are not likely to be defaced or removed during normal service. Unlike the required fireproof I.D. plate, this "supplemental" identification does not have to be affixed in a manner such that it is not likely to be lost or destroyed in an accident. Thus, the data may be affixed in a relatively low-cost manner, such as by painting or decal.

C. Illegal Fuel Tank Installation

Part 43, Appendix B(a) and (d); § 91.27(c); and § 91.173(a) and (d)

This amendment requires that all affected aircraft modified with additional fuel tanks in the passenger or a baggage compartment, under Part 43 of the FAR, physically have on board the aircraft a copy of the required FAA Form 337. This includes aircraft previously not required to have an FAA Form 337 for fuel tank installations when operating with a special flight permit for the purpose of delivery or export. This amendment also requires that the owner or operator of an aircraft with such fuel tanks present the FAA Form 337 for inspection by any law enforcement officer.

This amendment provides one means for FAA, Customs, and other investigators to quickly obtain evidence as to whether the additional tanks in the aircraft are authorized or possibly illegally installed. Enforcement action can then be taken by the FAA and the appropriate agency against persons operating such aircraft. Action can also be taken to prevent the aircraft from being flown. This rule makes it possible for Customs to concentrate interdiction efforts on those aircraft modified with unauthorized fuel tank installations and which are possibly being used for illegal drug trafficking. By limiting this rule to aircraft modified with fuel tanks in the passenger or baggage compartments, which requires an FAA Form 337 under Part 43, operators of aircraft with FAA-approved extended-range fuel tanks located elsewhere in the aircraft (e.g., wing tip tanks) would not be required to keep that authorization on board the aircraft.

DISCUSSION OF COMMENTS:

General

Eight commenters, representing the views of the aviation community, participated in this rulemaking. Comments were submitted by individual pilots and owners and operators of aircraft including representatives of some aviation and aircraft manufacturers associations. Generally, the commenters support Customs' objective to stop the flow of illegal drugs into the United States by air. However, most commenters disagree as to what amendments should be adopted and who should comply with them. Some commenters disagree with all the amendments or recommend proposals which are outside the scope of the NPRM.

Some commenters claim that I.D. plates affixed to the exterior surface of large aircraft would be too high to read by an observer on the ground. Others argue that there is no need to change the I.D. plate location on some rotorcraft, open cockpit aircraft, and balloons where the required I.D. plate can be viewed by an observer outside the aircraft.

However, although I.D. plates can be viewed from the outside of some aircraft, the FAA has determined that I.D. plates in a standard location on the exterior surface adjacent to and aft of the rear-most entrance door of an aircraft provides for quick access to the I.D. information, in addition to precluding the need to gain access to the inside of an aircraft.

With regard to the redundant data, commenters contend that there is no need to affix the same data in two places on the same aircraft, therefore, the status quo should be maintained or the NPRM withdrawn.

The FAA disagrees because the I.D. information which is secured inside an aircraft cannot be obtained readily, as some contend, without gaining access to the aircraft. The FAA has determined that the standard exterior location is the most effective location for I.D. plates and/or data. A standard location provides quick access to the identification data with the least impact on the aviation community since most aircraft owners and operators already comply with that requirement, while others can mark their aircraft inexpensively as discussed in Notice No. 86-9.

Additional Fuel Tank Installations

The majority of commenters responding to this amendment agreed with the requirement to have the completed FAA Form 337 aboard an aircraft modified in accordance with Part 43 with fuel tanks in the passenger or baggage compartments. Those opposed contend that the amendment imposes an unnecessary burden on operators of aircraft that may be modified with fuel tanks in accordance with regulations which do not require the use of an FAA Form 337 for documenting major alterations. Accordingly, they maintain that the rule should exempt operators under Parts 121, 127, or 135, as applicable.

The FAA considered the regulations governing aircraft modified under other applicable provisions. However, approved documentation under a continuous airworthiness maintenance program may not be as suitable for carriage on an aircraft as the FAA Form 337. For that reason, the proposal amendment applied only to aircraft modified pursuant to Part 43 with fuel tanks installed in the passenger or baggage compartments. This amendment adopts that proposal. The new rule does not require documentation for aircraft modified under other provisions of the FAR.

Some commenters state that the FAA Form 337 can be easily falsified or that an approved installation could be used by a smuggler and that, either way, the amendment has little value. The FAA does not agree since violations of the applicable regulations, such as unapproved equipment installations, are vigorously pursued and enforced by the FAA to maintain safety in air operations. In addition, Customs considers this amendment to be a significant step toward curbing the use of aircraft for drug smuggling.

Time for Compliance

Some commenters object that the proposal does not provide sufficient time for compliance and that this creates an undue burden on owners and operators because of the requirements for ferrying and downtime. The FAA agrees with these commenters. It was planned to allow a period of 90 days after the effective date for compliance with the requirements for the display of 12-inch N-numbers and for the affixing of I.D. plate and/or data. In the NPRM, however, the "October 8, 1986" date was published in error apparently by using the published date of July 10, 1986, as the start of the 90-day period. A correction is made to allow sufficient time for compliance.

To preclude an undue burden on aircraft owners and operators, the 90-day period provides time for appropriate N-numbers and the I.D. plate and/or data to be affixed. The delayed compliance time only applies to the requirements for the display of 12-inch N-numbers and the I.D. plate and/or data. The display of temporary 12-inch markings is permitted for N-numbers, as appropriate, and the method for affixing data plate information on the exterior surface of an aircraft is purposely undefined to allow for economic alternatives, such as painting or decals.

Cost of Compliance

The majority of commenters object to the cost that would be imposed by the proposed 12-inch N-numbers and I.D. plate amendments. They contend that the cost of compliance estimates are too low. In addition, the commenters indicate that the FAA cost estimates do not reflect a loss of revenue caused by ferrying and downtime.

Some commenters claim that I.D. plates affixed to the exterior surface of large aircraft would be too high to read by an observer on the ground. Others argue that there is no need to change the I.D. plate location on some rotorcraft, open cockpit aircraft, and balloons where the required I.D. plate can be viewed by an observer outside the aircraft.

However, although I.D. plates can be viewed from the outside of some aircraft, the FAA has determined that I.D. plates in a standard location on the exterior surface adjacent to and aft of the rear-most entrance door of an aircraft provides for quick access to the I.D. information, in addition to precluding the need to gain access to the inside of an aircraft.

With regard to the redundant data, commenters contend that there is no need to affix the same data in two places on the same aircraft, therefore, the status quo should be maintained or the NPRM withdrawn.

The FAA disagrees because the I.D. information which is secured inside an aircraft cannot be obtained readily, as some contend, without gaining access to the aircraft. The FAA has determined that the standard exterior location is the most effective location for I.D. plates and/or data. A standard location provides quick access to the identification data with the least impact on the aviation community since most aircraft owners and operators already comply with that requirement, while others can mark their aircraft inexpensively as discussed in Notice No. 86-9.

Additional Fuel Tank Installations

The majority of commenters responding to this amendment agreed with the requirement to have the completed FAA Form 337 aboard an aircraft modified in accordance with Part 43 with fuel tanks in the passenger or baggage compartments. Those opposed contend that the amendment imposes an unnecessary burden on operators of aircraft that may be modified with fuel tanks in accordance with regulations which do not require the use of an FAA Form 337 for documenting major alterations. Accordingly, they maintain that the rule should exempt operators under Parts 121, 127, or 135, as applicable.

The FAA considered the regulations governing aircraft modified under other applicable provisions. However, approved documentation under a continuous airworthiness maintenance program may not be as suitable for carriage on an aircraft as the FAA Form 337. For that reason, the proposal amendment applied only to aircraft modified pursuant to Part 43 with fuel tanks installed in the passenger or baggage compartments. This amendment adopts that proposal. The new rule does not require documentation for aircraft modified under other provisions of the FAR.

Some commenters state that the FAA Form 337 can be easily falsified or that an approved installation could be used by a smuggler and that, either way, the amendment has little value. The FAA does not agree since violations of the applicable regulations, such as unapproved equipment installations, are vigorously pursued and enforced by the FAA to maintain safety in air operations. In addition, Customs considers this amendment to be a significant step toward curbing the use of aircraft for drug smuggling.

Time for Compliance

Some commenters object that the proposal does not provide sufficient time for compliance and that this creates an undue burden on owners and operators because of the requirements for ferrying and downtime. The FAA agrees with these commenters. It was planned to allow a period of 90 days after the effective date for compliance with the requirements for the display of 12-inch N-numbers and for the affixing of I.D. plate and/or data. In the NPRM, however, the "October 8, 1986" date was published in error apparently by using the published date of July 10, 1986, as the start of the 90-day period. A correction is made to allow sufficient time for compliance.

To preclude an undue burden on aircraft owners and operators, the 90-day period provides time for appropriate N-numbers and the I.D. plate and/or data to be affixed. The delayed compliance time only applies to the requirements for the display of 12-inch N-numbers and the I.D. plate and/or data. The display of temporary 12-inch markings is permitted for N-numbers, as appropriate, and the method for affixing data plate information on the exterior surface of an aircraft is purposely undefined to allow for economic alternatives, such as painting or decals.

Cost of Compliance

The majority of commenters object to the cost that would be imposed by the proposed 12-inch N-numbers and I.D. plate amendments. They contend that the cost of compliance estimates are too low. In addition, the commenters indicate that the FAA cost estimates do not reflect a loss of revenue caused by ferrying and downtime.

This evaluation estimates that the one-time cost of compliance associated with the amendments to § 45.11 (I.D. plate amendment) and § 45.29 (12-inch N-number amendment) are expected to range between \$7 million and \$8 million (present discounted value of cost at 10 percent, 1987). The amendment to § 45.11 will impact an estimated 79,300 to 82,000 fixed-wing aircraft, rotorcraft, and other types of affected civil aircraft (blimps, balloons, and gliders) at a cost of \$100 each. Moreover, the amendment to § 45.29 will affect an estimated 3,900 to 13,500 fixed-wing aircraft and rotorcraft at a cost of \$55 to \$115 each, respectively. Collectively, the cost of compliance will range between \$100 and \$215 per aircraft (1985 dollars). Conversely, the amendments to Appendix B of Part 43 (Recording of Major Repairs and Major Alterations), § 91.27 (Civil Aircraft: Certifications Required), and § 91.173 (Maintenance Records) are estimated to impose no additional cost. Under this amendment, this form is filled out in triplicate, rather than duplicate, to provide for a copy to be kept on board an aircraft modified with a fuel tank in the passenger compartment or a baggage compartment. In addition, the amendment to § 45.21 (General) is estimated to impose no additional cost to owners and operators of aircraft which may penetrate a defense zone because it merely provides for the option of using temporary or permanent 12-inch markings rather than an additional requirement.

Benefits

The anticipated benefits of the amendments include the following: (1) improved positive identification of those aircraft previously allowed to display small N-numbers when penetrating the ADIZ or DEWIZ; (2) improved verification of aircraft identification and enhanced ability of inspectors to determine non-compliance, such as whether a suspect aircraft had been stolen or the N-numbers falsified; and (3) increased effectiveness of Customs in concentrating interdiction efforts on suspicious aircraft not authorized to operate with fuel tanks installed in the passenger compartment or a baggage compartment. The FAA has been unable to quantitatively determine the extent to which Customs' drug interdiction efforts will be enhanced by this rule and resulting benefits. This difficulty is largely attributed to the fact that benefits of Customs, drug enforcement efforts represent a public good. This good does not subject itself to market evaluation. Thus, it is extremely difficult to evaluate these benefits in monetary terms. An indication of the potential benefits that could accrue from reduced drug abuse activity, due to enhanced drug interdiction, is shown in a 1984 report by the Research Triangle Institute. The report revealed that the economic cost to society of drug abuse amounts to approximately \$64 billion annually.

Safety benefits are also expected to accrue from this rule. These benefits are related to the lowering of fatalities and serious injuries associated with operation of civil aircraft in active drug trafficking areas. A review of the National Transportation Safety Board's data base for drug-related accidents revealed that 127 fatalities and 33 serious injuries occurred between 1975 and 1984. During this period, these statistics equated to an annual average of 13 fatalities and 3 serious injuries related to drug trafficking activity. The rule is expected to have a positive impact on these grim statistics, though to what extent is not known by the FAA.

The regulatory evaluation that has been placed in the docket contains information in more detail related to costs and benefits that are expected to accrue from the implementation of this rule.

Regulatory Flexibility Determination

The FAA has determined that, under the criteria of the Regulatory Flexibility Act of 1980, amendments contained in this rule are not expected to have a significant economic impact on a substantial number of small entities. The responsibility for marking or providing I.D. plate information on existing aircraft is placed directly on the owner or operator of the aircraft. However, for new aircraft, the I.D. plate responsibility is placed on the applicant for airworthiness certificate, usually the manufacturer. This amendment will impose no additional cost on manufacturers since it only requires that the I.D. plate be located on the exterior rather than interior of the aircraft. The majority of small entities impacted by this rule represent operators of unscheduled aircraft for hire. These operators are expected to incur a one-time compliance cost ranging between \$155 and \$215. These costs are far below the annualized threshold of significant regulatory cost of \$3,540. Therefore, this rule will not have a significant economic impact on a substantial number of small entities.

International Trade Impact Statement

All foreign and domestic manufactured aircraft sold in the United States need to be identified in accordance with the provisions of this rule. The cost of marking the aircraft is borne by individual domestic owners or operators only. This rule will not have an impact on trade opportunities for U.S. firms doing business overseas or for foreign firms doing business in the United States.

CONCLUSION:

The amendments contained in this FAA document involve only the cost of affixing N-numbers or data to aircraft belonging to a minor part of the aviation community. The benefits are unquantifiable

This evaluation estimates that the one-time cost of compliance associated with the amendments to § 45.11 (I.D. plate amendment) and § 45.29 (12-inch N-number amendment) are expected to range between \$7 million and \$8 million (present discounted value of cost at 10 percent, 1987). The amendment to § 45.11 will impact an estimated 79,300 to 82,000 fixed-wing aircraft, rotorcraft, and other types of affected civil aircraft (blimps, balloons, and gliders) at a cost of \$100 each. Moreover, the amendment to § 45.29 will affect an estimated 3,900 to 13,500 fixed-wing aircraft and rotorcraft at a cost of \$55 to \$115 each, respectively. Collectively, the cost of compliance will range between \$100 and \$215 per aircraft (1985 dollars). Conversely, the amendments to Appendix B of Part 43 (Recording of Major Repairs and Major Alterations), § 91.27 (Civil Aircraft: Certifications Required), and § 91.173 (Maintenance Records) are estimated to impose no additional cost. Under this amendment, this form is filled out in triplicate, rather than duplicate, to provide for a copy to be kept on board an aircraft modified with a fuel tank in the passenger compartment or a baggage compartment. In addition, the amendment to § 45.21 (General) is estimated to impose no additional cost to owners and operators of aircraft which may penetrate a defense zone because it merely provides for the option of using temporary or permanent 12-inch markings rather than an additional requirement.

Benefits

The anticipated benefits of the amendments include the following: (1) improved positive identification of those aircraft previously allowed to display small N-numbers when penetrating the ADIZ or DEWIZ; (2) improved verification of aircraft identification and enhanced ability of inspectors to determine non-compliance, such as whether a suspect aircraft had been stolen or the N-numbers falsified; and (3) increased effectiveness of Customs in concentrating interdiction efforts on suspicious aircraft not authorized to operate with fuel tanks installed in the passenger compartment or a baggage compartment. The FAA has been unable to quantitatively determine the extent to which Customs' drug interdiction efforts will be enhanced by this rule and resulting benefits. This difficulty is largely attributed to the fact that benefits of Customs, drug enforcement efforts represent a public good. This good does not subject itself to market evaluation. Thus, it is extremely difficult to evaluate these benefits in monetary terms. An indication of the potential benefits that could accrue from reduced drug abuse activity, due to enhanced drug interdiction, is shown in a 1984 report by the Research Triangle Institute. The report revealed that the economic cost to society of drug abuse amounts to approximately \$64 billion annually.

Safety benefits are also expected to accrue from this rule. These benefits are related to the lowering of fatalities and serious injuries associated with operation of civil aircraft in active drug trafficking areas. A review of the National Transportation Safety Board's data base for drug-related accidents revealed that 127 fatalities and 33 serious injuries occurred between 1975 and 1984. During this period, these statistics equated to an annual average of 13 fatalities and 3 serious injuries related to drug trafficking activity. The rule is expected to have a positive impact on these grim statistics, though to what extent is not known by the FAA.

The regulatory evaluation that has been placed in the docket contains information in more detail related to costs and benefits that are expected to accrue from the implementation of this rule.

Regulatory Flexibility Determination

The FAA has determined that, under the criteria of the Regulatory Flexibility Act of 1980, amendments contained in this rule are not expected to have a significant economic impact on a substantial number of small entities. The responsibility for marking or providing I.D. plate information on existing aircraft is placed directly on the owner or operator of the aircraft. However, for new aircraft, the I.D. plate responsibility is placed on the applicant for airworthiness certificate, usually the manufacturer. This amendment will impose no additional cost on manufacturers since it only requires that the I.D. plate be located on the exterior rather than interior of the aircraft. The majority of small entities impacted by this rule represent operators of unscheduled aircraft for hire. These operators are expected to incur a one-time compliance cost ranging between \$155 and \$215. These costs are far below the annualized threshold of significant regulatory cost of \$3,540. Therefore, this rule will not have a significant economic impact on a substantial number of small entities.

International Trade Impact Statement

All foreign and domestic manufactured aircraft sold in the United States need to be identified in accordance with the provisions of this rule. The cost of marking the aircraft is borne by individual domestic owners or operators only. This rule will not have an impact on trade opportunities for U.S. firms doing business overseas or for foreign firms doing business in the United States.

CONCLUSION:

The amendments contained in this FAA document involve only the cost of affixing N-numbers or data to aircraft belonging to a minor part of the aviation community. The benefits are unquantifiable

general operating and flight rules to make them more understandable and easier to use. Other proposals were made to delete redundancies and obsolete compliance dates and to make other minor changes.

Notice No. 79-2A did not contain any substantive changes; however, it did inform the public that the FAA considered that notice to be the first step in a regulatory review of Part 91 consistent with the objective of Executive Order 12291. With this in mind, the FAA invited additional specific comments to help identify substantive areas to be reviewed and possibly included in subsequent proposals concerning Part 91. The notice further stated that the FAA would not take final action concerning the reorganization until substantive changes were proposed and the public had been given an opportunity to comment on those proposals.

The FAA published Notice No. 79-2B (46 FR 60461; December 10, 1981) to extend the comment period for Notice No. 79-2A by 120 days. That notice was issued in response to a petition from the National Business Aircraft Association to allow additional time for commenters to prepare substantive comments.

The FAA received 69 comments in response to Notice No. 79-2A. The majority of these comments favored the proposal and were discussed in Notice No. 79-2C (50 FR 11292; March 20, 1985).

Notice 79-2C proposed four substantive changes in addition to the numerous changes made to reorganize and clarify existing rules. Two of these changes were made in response to comments received from the public. These changes are as follows:

- (1) Section 91.117—Allows reciprocating-powered aircraft to be operated at 200 knots in an airport traffic area;
- (2) Section 91.135—Allows operators desiring authorizations to deviate from positive control area and route segment requirements to utilize a 48-hour oral notification system;
- (3) Section 91.409—Allows operators of turbine-powered rotorcraft to use an alternate inspection program, such as an FAA-approved inspection program; and
- (4) Sections 91.205, 91.509, and 91.511—Defines “shore” as it is used in these sections to exclude tidal flats.

Public Comments

Forty-seven comments were received in response to Notice No. 79-2C. A number of commenters recommended regulations that were not proposed in the notice. Because such comments discuss matters which the public has not had an opportunity to consider, they are beyond the scope of the notice and cannot be considered without further notice and public participation. Some of these comments concern proposals that will be considered by the FAA in future rulemaking and, therefore, could be published in a future notice.

There were two areas in particular where several proposals were received that are not within the scope of the notice. First, 11 comments specifically request that balloons be excepted from certain requirements now pertaining to aircraft in general. These comments seek substantive change to the existing regulations not proposed in the notice.

Second, a number of commenters propose substantive changes to the regulations with regard to rotorcraft. Although these comments are not within the scope of this rulemaking, they were considered in the Rotorcraft Regulatory Review Program, Notice No. 5.

Two commenters are opposed to changing masculine references to “airman” to read “he or she.” One commenter states that this would keep the text shorter and speed up the reading of the text. The other commenter states that § 1.3(a)(3) already provides that “words importing the masculine gender include the feminine,” and the better course would be to refer to the “person,” or the “pilot.” The FAA agrees with these commenters. Accordingly, references throughout Part 91 that use the words “he” or “she” have been changed to refer to the “person,” the “pilot,” the “crewmember,” or the “Administrator.”

One commenter writes that the use of “pilot in command” and “PIC” is inconsistent in the proposed rules. The FAA agrees with this commenter and, accordingly, has changed references to “PIC” in §§ 91.123(a) and 91.129(b) to “pilot in command” to make their use consistent throughout Part 91.

A commenter suggests that all references to distances expressed in miles should state whether they are statute or nautical miles. The FAA agrees that such references should be clear. Accordingly, references to distance expressed in miles in §§ 91.171(b)(4)(ii) and 91.207(e)(3) are changed by adding the word “nautical” to reflect that the distances are expressed in nautical miles since they reference ground-

general operating and flight rules to make them more understandable and easier to use. Other proposals were made to delete redundancies and obsolete compliance dates and to make other minor changes.

Notice No. 79-2A did not contain any substantive changes; however, it did inform the public that the FAA considered that notice to be the first step in a regulatory review of Part 91 consistent with the objective of Executive Order 12291. With this in mind, the FAA invited additional specific comments to help identify substantive areas to be reviewed and possibly included in subsequent proposals concerning Part 91. The notice further stated that the FAA would not take final action concerning the reorganization until substantive changes were proposed and the public had been given an opportunity to comment on those proposals.

The FAA published Notice No. 79-2B (46 FR 60461; December 10, 1981) to extend the comment period for Notice No. 79-2A by 120 days. That notice was issued in response to a petition from the National Business Aircraft Association to allow additional time for commenters to prepare substantive comments.

The FAA received 69 comments in response to Notice No. 79-2A. The majority of these comments favored the proposal and were discussed in Notice No. 79-2C (50 FR 11292; March 20, 1985).

Notice 79-2C proposed four substantive changes in addition to the numerous changes made to reorganize and clarify existing rules. Two of these changes were made in response to comments received from the public. These changes are as follows:

- (1) Section 91.117—Allows reciprocating-powered aircraft to be operated at 200 knots in an airport traffic area;
- (2) Section 91.135—Allows operators desiring authorizations to deviate from positive control area and route segment requirements to utilize a 48-hour oral notification system;
- (3) Section 91.409—Allows operators of turbine-powered rotorcraft to use an alternate inspection program, such as an FAA-approved inspection program; and
- (4) Sections 91.205, 91.509, and 91.511—Defines “shore” as it is used in these sections to exclude tidal flats.

Public Comments

Forty-seven comments were received in response to Notice No. 79-2C. A number of commenters recommended regulations that were not proposed in the notice. Because such comments discuss matters which the public has not had an opportunity to consider, they are beyond the scope of the notice and cannot be considered without further notice and public participation. Some of these comments concern proposals that will be considered by the FAA in future rulemaking and, therefore, could be published in a future notice.

There were two areas in particular where several proposals were received that are not within the scope of the notice. First, 11 comments specifically request that balloons be excepted from certain requirements now pertaining to aircraft in general. These comments seek substantive change to the existing regulations not proposed in the notice.

Second, a number of commenters propose substantive changes to the regulations with regard to rotorcraft. Although these comments are not within the scope of this rulemaking, they were considered in the Rotorcraft Regulatory Review Program, Notice No. 5.

Two commenters are opposed to changing masculine references to “airman” to read “he or she.” One commenter states that this would keep the text shorter and speed up the reading of the text. The other commenter states that § 1.3(a)(3) already provides that “words importing the masculine gender include the feminine,” and the better course would be to refer to the “person,” or the “pilot.” The FAA agrees with these commenters. Accordingly, references throughout Part 91 that use the words “he” or “she” have been changed to refer to the “person,” the “pilot,” the “crewmember,” or the “Administrator.”

One commenter writes that the use of “pilot in command” and “PIC” is inconsistent in the proposed rules. The FAA agrees with this commenter and, accordingly, has changed references to “PIC” in §§ 91.123(a) and 91.129(b) to “pilot in command” to make their use consistent throughout Part 91.

A commenter suggests that all references to distances expressed in miles should state whether they are statute or nautical miles. The FAA agrees that such references should be clear. Accordingly, references to distance expressed in miles in §§ 91.171(b)(4)(ii) and 91.207(e)(3) are changed by adding the word “nautical” to reflect that the distances are expressed in nautical miles since they reference ground-

suggest that the FAA withdraw the proposal and acknowledge the pink copy of the application as a temporary certificate of registration.

Another commenter is of the opinion that the FAA has not provided discussion, as required by Executive Order 12291, on the economic impacts that would result from the delay between application for an issuance or denial of the registration certificate, under the proposals, in the NPRM. The commenter maintains that future investment purchases and leases would also be adversely affected. Several commenters also question the regulatory consistency that the FAA claims as the basis for the change.

These comments were responded to in full in a Notice of Legal Opinion issued December 1988 (53 FR 50208; December 14, 1988). That Notice of Legal Opinion stated that the limitation of temporary authority to operate an aircraft without registration to domestic operations (as also provided in new § 91.203(a)(2)) reflects current U.S. law and practice. Concerning the economic impact of this ruling, the FAA in that Notice of Legal Opinion answered:

The aviation community has always been able to transfer ownership and register their aircraft with minimal difficulty. In order to mitigate the potential hardship that could result from grounding an aircraft used in international operations, pending receipt of a registration certificate, the Registry will, upon request, telex a copy of the Certificate of Aircraft Registration to the individual whose name appears on the application as the registered owner of the aircraft. The telex copy is issued after confirmation of the information contained on an Aircraft Registration Application and determination of eligibility for registration. The telex, which reflects critical and verified information resulting from the evaluation by the Registry of an application for aircraft registration, may be used as a temporary Certificate of Aircraft Registration until the original certificate is forwarded for carriage in the aircraft.

This telex certificate will assist owners who submit an application for aircraft registration and who wish to operate the aircraft as soon as possible in international operations. Since the telex, by its terms, is a form of registration certificate, the aircraft may be operated in international air navigation consistent with Article 29 of the Convention [Convention on International Civil Aviation (61 Stat. 1180; T.I.A.S. 1591; 15 U.N.T.S. 295)]. The Registry will telex this copy within a matter of days—often within 48 hours—to be kept in the aircraft until the original Certificate of Aircraft Registration (AC Form 8050-3) is forwarded to the registered owner.

Accordingly, the FAA has determined that the rule should be amended as proposed, and consistent with the Chief Counsel's legal opinion, to provide explicitly that operations of aircraft outside the United States for which an application for registration has been submitted but certificate of registration has not been issued are not authorized under the Federal Aviation Regulations.

Several judicial decisions have defined the “shore” as including tidal flats. In some parts of the United States, these tidal flats can extend for several miles and, because of the extreme tides prevalent in these areas, the land may be submerged under as much as 25 to 35 feet of water during periods of high tide. The intent of the rule is to require operators carrying passengers for hire over these areas to equip their aircraft with the necessary flotation gear and pyrotechnic devices. Therefore, “shore,” when it is used in §§ 91.205, 91.509, and 91.511, is defined to exclude land areas, such as tidal flats, which are intermittently under water.

An incorrect reference to “§ 91.169” was used in proposed § 91.409(e), which has been corrected to “§ 91.409” in the final rule.

It was pointed out by several commenters that the word “stop” in § 91.605(c)(2) was inadvertently included in the proposal and should be deleted. The commenters are correct, and the final rule has been amended accordingly. Also, the word “if” following the word “distance” in that same sentence has been corrected to read “is.” In addition to the specific changes discussed above, minor changes have been made in the wording of the regulations proposed in Notice No. 72-2C. In § 91.3(b), the word “in-flight” has been inserted to clarify that the deviation authority of § 91.3 applies only to in-flight emergencies which affect the safe completion of the flight.

The original intent of § 91.3 was to allow the pilot in command to deviate from certain regulations in the event of an in-flight emergency. Over time, regulations involving non-flight items were inserted into Subparts A and B, while flight-related regulations were inserted in other Subparts. Therefore, the word “in-flight” is being added to return the language to its original intent.

Other changes are nonsubstantive in nature. Except for such minor revisions, those parts of the proposal for which there were no comments are adopted as proposed. Finally, all other sections of Part 91 remain unchanged except for renumbering (see the cross-reference lists below).

Several amendments to Part 91 adopted since Notice No. 79-2C were published are reflected in the final rule. Where reference to other sections of this part were set forth in an amendment, the references

suggest that the FAA withdraw the proposal and acknowledge the pink copy of the application as a temporary certificate of registration.

Another commenter is of the opinion that the FAA has not provided discussion, as required by Executive Order 12291, on the economic impacts that would result from the delay between application for an issuance or denial of theregistration certificate, under the proposals, in the NPRM. The commenter maintains that future investment purchases and leases would also be adversely affected. Several commenters also question the regulatory consistency that the FAA claims as the basis for the change.

These comments were responded to in full in a Notice of Legal Opinion issued December 1988 (53 FR 50208; December 14, 1988). That Notice of Legal Opinion stated that the limitation of temporary authority to operate an aircraft without registration to domestic operations (as also provided in new § 91.203(a)(2)) reflects current U.S. law and practice. Concerning the economic impact of this ruling, the FAA in that Notice of Legal Opinion answered:

The aviation community has always been able to transfer ownership and register their aircraft with minimal difficulty. In order to mitigate the potential hardship that could result from grounding an aircraft used in international operations, pending receipt of a registration certificate, the Registry will, upon request, telex a copy of the Certificate of Aircraft Registration to the individual whose name appears on the application as the registered owner of the aircraft. The telex copy is issued after confirmation of the information contained on an Aircraft Registration Application and determination of eligibility for registration. The telex, which reflects critical and verified information resulting from the evaluation by the Registry of an application for aircraft registration, may be used as a temporary Certificate of Aircraft Registration until the original certificate is forwarded for carriage in the aircraft.

This telex certificate will assist owners who submit an application for aircraft registration and who wish to operate the aircraft as soon as possible in international operations. Since the telex, by its terms, is a form of registration certificate, the aircraft may be operated in international air navigation consistent with Article 29 of the Convention [Convention on International Civil Aviation (61 Stat. 1180; T.I.A.S. 1591; 15 U.N.T.S. 295)]. The Registry will telex this copy within a matter of days-often within 48 hours-to be kept in the aircraft until the original Certificate of Aircraft Registration (AC Form 8050-3) is forwarded to the registered owner.

Accordingly, the FAA has determined that the rule should be amended as proposed, and consistent with the Chief Counsel's legal opinion, to provide explicitly that operations of aircraft outside the United States for which an application for registration has been submitted but certificate of registration has not been issued are not authorized under the Federal Aviation Regulations.

Several judicial decisions have defined the "shore" as including tidal flats. In some parts of the United States, these tidal flats can extend for several miles and, because of the extreme tides prevalent in these areas, the land may be submerged under as much as 25 to 35 feet of water during periods of high tide. The intent of the rule is to require operators carrying passengers for hire over these areas to equip their aircraft with the necessary flotation gear and pyrotechnic devices. Therefore, "shore," when it is used in §§ 91.205, 91.509, and 91.511, is defined to exclude land areas, such as tidal flats, which are intermittently under water.

An incorrect reference to "§ 91.169" was used in proposed § 91.409(e), which has been corrected to "§ 91.409" in the final rule.

It was pointed out by several commenters that the word "stop" in § 91.605(c)(2) was inadvertently included in the proposal and should be deleted. The commenters are correct, and the final rule has been amended accordingly. Also, the word "if" following the word "distance" in that same sentence has been corrected to read "is." In addition to the specific changes discussed above, minor changes have been made in the wording of the regulations proposed in Notice No. 72-2C. In § 91.3(b), the word "in-flight" has been inserted to clarify that the deviation authority of § 91.3 applies only to in-flight emergencies which affect the safe completion of the flight.

The original intent of § 91.3 was to allow the pilot in command to deviate from certain regulations in the event of an in-flight emergency. Over time, regulations involving non-flight items were inserted into Subparts A and B, while flight-related regulations were inserted in other Subparts. Therefore, the word "in-flight" is being added to return the language to its original intent.

Other changes are nonsubstantive in nature. Except for such minor revisions, those parts of the proposal for which there were no comments are adopted as proposed. Finally, all other sections of Part 91 remain unchanged except for renumbering (see the cross-reference lists below).

Several amendments to Part 91 adopted since Notice No. 79-2C were published are reflected in the final rule. Where reference to other sections of this part were set forth in an amendment, the references

Proposed § 91.215 has been revised accordingly. Amendment No. 91-198 also revised paragraph (b)(2)(iii) of current § 91.90 to allow operations conducted prior to December 1, 1987, in Group II TCAs, to be exempt from the new equipment requirements of current § 91.24. Amendment No. 91-203 (53 FR 23374; June 21, 1988) subsequently revised § 91.90, effective July 21, 1988. Amendment No. 91-205 (53 FR 40323; October 14, 1988) further revised § 91.90 in its entirety effective January 12, 1989. Amendment No. 90-209 (54 FR 24883; June 9, 1989) amended § 91.90 by delaying the effective date of the section for helicopter operations. The rule, covering all amendments to date, appears in this revision as § 91.131.

Amendment No. 91-199, (52 FR 9636; March 25, 1987) amended current § 91.35 by renumbering the paragraphs and adding a new paragraph that requires any operator who has installed approved flight recorders and approved cockpit voice recorders to keep the recorded information for at least 60 days, or longer, if requested by the Administrator or the National Transportation Safety Board. This amendment took effect on May 26, 1987. The amended rule now appears as § 91.609.

Amendment No. 91-200, (52 FR 17277; May 6, 1987) amended current § 91.173 by requiring each registered aircraft owner or operator to keep "preventive maintenance" records as well as maintenance, alteration, and records of the 100-hour annual, progressive, and other required or approved inspections, as appropriate, for each engine, propeller, rotor, and appliance of an aircraft. This amendment took effect on June 5, 1987. This amended rule now appears as § 91.417(a)(1).

Amendment No. 91-201, (52 FR 20028; May 26, 1987) adds the reference to Part 129 to the exception in current § 91.161(b) from the requirements of §§ 91.165, 91.169, 91.171, 91.173, and 91.174 for aircraft maintained in accordance with a continuous maintenance program as provided for in Part 129. The amendment took effect on August 25, 1987. This amended rule now appears as § 91.401(b).

Amendment No. 91-202, (52 FR 34102; September 9, 1987 and 52 FR 35234; September 18, 1987) amended current § 91.27 on civil aircraft certification requirements by adding a new paragraph (c) to require that a copy of the form which authorized the alteration of an aircraft with fuel tanks within the passenger or a baggage compartment be kept on board the modified aircraft. This new rule now appears as § 91.203(c). Current § 91.173 on maintenance records was revised by requiring that such records be made available to the Administrator or an authorized representative of the National Transportation Safety Board and when such a fuel tank is installed as set forth in § 91.35 as amended pursuant to Part 43, a copy of the FAA Form 337 be kept on board the modified aircraft. This new rule appears as § 91.417(b) and (c). This amendment took effect on December 8, 1987.

Amendment No. 91-203, (53 FR 23374; June 21, 1988, 53 FR 25050; July 1, 1988, and 53 FR 26592; July 14, 1988) amended or revised § 91.24 (ATC transponder and altitude reporting equipment and use), 91.88 (Airport radar service areas), and 91.90 (Terminal control areas), and by adding a new Appendix D entitled "Airports/Locations Where the Transponder Requirements of § 91.24(b)(5)(ii) Apply," regarding use of transponders with automatic altitude reporting. This amendment took effect on July 21, 1988. Amendment No. 91-205 (53 FR 40323; October 14, 1988) revised § 91.90 in its entirety effective January 12, 1989. Amendment No. 91-209 (54 FR 24883; June 9, 1989) amended § 91.90 by delaying the effective date of the section for helicopter operations. These rules now appear in this revision as §§ 91.215, 91.130, 91.131, and new Appendix D to Part 91, respectively.

Amendment No. 91-204, (53 FR 26145; July 11, 1988) amended current § 91.35 on flight recorders and cockpit voice recorders to require digital flight recorders and voice recorders to be installed on selected aircraft operated in general aviation. The specifications for such recorders are set forth in a new Appendix E to Part 91 for airplanes and in a new Appendix F to Part 91 for helicopters. The amendment is reflected as § 91.609(b), (c), (d), and (e), and new Appendixes E and F to Part 91. This amendment becomes effective on October 11, 1991.

Amendment No. 91-205 (53 FR 40323; October 14, 1988) revised the classification and pilot and equipment requirements for conducting operations in terminal control areas (TCA's) by amending § 91.90 to establish a single-class TCA; require the pilot-in-command of a civil aircraft to hold at least a private pilot certificate, except for a student pilot who has received certain documented training; and, to eliminate the helicopter exception from the minimum equipment requirement. The amendment was effective on January 12, 1989. Subsequently, Amendment No. 91-209 (54 FR 24883; June 9, 1989) amended § 91.90(c)(1) by delaying the application of the section for helicopter operations for one year. Revised § 91.131 covers these amendments.

Amendment No. 91-206 (53 FR 50195; December 13, 1988) amended § 91.30 to permit rotorcraft, non-turbine-powered airplanes, gliders, and lighter-than-air aircraft, for which an approved Master Minimum Equipment List has not been developed, to be operated with inoperative instruments and equipment not essential for the safe operation of the aircraft. The amendment also permits general aviation operators

Proposed § 91.215 has been revised accordingly. Amendment No. 91-198 also revised paragraph (b)(2)(iii) of current § 91.90 to allow operations conducted prior to December 1, 1987, in Group II TCAs, to be exempt from the new equipment requirements of current § 91.24. Amendment No. 91-203 (53 FR 23374; June 21, 1988) subsequently revised § 91.90, effective July 21, 1988. Amendment No. 91-205 (53 FR 40323; October 14, 1988) further revised § 91.90 in its entirety effective January 12, 1989. Amendment No. 90-209 (54 FR 24883; June 9, 1989) amended § 91.90 by delaying the effective date of the section for helicopter operations. The rule, covering all amendments to date, appears in this revision as § 91.131.

Amendment No. 91-199, (52 FR 9636; March 25, 1987) amended current § 91.35 by renumbering the paragraphs and adding a new paragraph that requires any operator who has installed approved flight recorders and approved cockpit voice recorders to keep the recorded information for at least 60 days, or longer, if requested by the Administrator or the National Transportation Safety Board. This amendment took effect on May 26, 1987. The amended rule now appears as § 91.609.

Amendment No. 91-200, (52 FR 17277; May 6, 1987) amended current § 91.173 by requiring each registered aircraft owner or operator to keep "preventive maintenance" records as well as maintenance, alteration, and records of the 100-hour annual, progressive, and other required or approved inspections, as appropriate, for each engine, propeller, rotor, and appliance of an aircraft. This amendment took effect on June 5, 1987. This amended rule now appears as § 91.417(a)(1).

Amendment No. 91-201, (52 FR 20028; May 26, 1987) adds the reference to Part 129 to the exception in current § 91.161(b) from the requirements of §§ 91.165, 91.169, 91.171, 91.173, and 91.174 for aircraft maintained in accordance with a continuous maintenance program as provided for in Part 129. The amendment took effect on August 25, 1987. This amended rule now appears as § 91.401(b).

Amendment No. 91-202, (52 FR 34102; September 9, 1987 and 52 FR 35234; September 18, 1987) amended current § 91.27 on civil aircraft certification requirements by adding a new paragraph (c) to require that a copy of the form which authorized the alteration of an aircraft with fuel tanks within the passenger or a baggage compartment be kept on board the modified aircraft. This new rule now appears as § 91.203(c). Current § 91.173 on maintenance records was revised by requiring that such records be made available to the Administrator or an authorized representative of the National Transportation Safety Board and when such a fuel tank is installed as set forth in § 91.35 as amended pursuant to Part 43, a copy of the FAA Form 337 be kept on board the modified aircraft. This new rule appears as § 91.417(b) and (c). This amendment took effect on December 8, 1987.

Amendment No. 91-203, (53 FR 23374; June 21, 1988, 53 FR 25050; July 1, 1988, and 53 FR 26592; July 14, 1988) amended or revised § 91.24 (ATC transponder and altitude reporting equipment and use), 91.88 (Airport radar service areas), and 91.90 (Terminal control areas), and by adding a new Appendix D entitled "Airports/Locations Where the Transponder Requirements of § 91.24(b)(5)(ii) Apply," regarding use of transponders with automatic altitude reporting. This amendment took effect on July 21, 1988. Amendment No. 91-205 (53 FR 40323; October 14, 1988) revised § 91.90 in its entirety effective January 12, 1989. Amendment No. 91-209 (54 FR 24883; June 9, 1989) amended § 91.90 by delaying the effective date of the section for helicopter operations. These rules now appear in this revision as §§ 91.215, 91.130, 91.131, and new Appendix D to Part 91, respectively.

Amendment No. 91-204, (53 FR 26145; July 11, 1988) amended current § 91.35 on flight recorders and cockpit voice recorders to require digital flight recorders and voice recorders to be installed on selected aircraft operated in general aviation. The specifications for such recorders are set forth in a new Appendix E to Part 91 for airplanes and in a new Appendix F to Part 91 for helicopters. The amendment is reflected as § 91.609(b), (c), (d), and (e), and new Appendixes E and F to Part 91. This amendment becomes effective on October 11, 1991.

Amendment No. 91-205 (53 FR 40323; October 14, 1988) revised the classification and pilot and equipment requirements for conducting operations in terminal control areas (TCA's) by amending § 91.90 to establish a single-class TCA; require the pilot-in-command of a civil aircraft to hold at least a private pilot certificate, except for a student pilot who has received certain documented training; and, to eliminate the helicopter exception from the minimum equipment requirement. The amendment was effective on January 12, 1989. Subsequently, Amendment No. 91-209 (54 FR 24883; June 9, 1989) amended § 91.90(c)(1) by delaying the application of the section for helicopter operations for one year. Revised § 91.131 covers these amendments.

Amendment No. 91-206 (53 FR 50195; December 13, 1988) amended § 91.30 to permit rotorcraft, non-turbine-powered airplanes, gliders, and lighter-than-air aircraft, for which an approved Master Minimum Equipment List has not been developed, to be operated with inoperative instruments and equipment not essential for the safe operation of the aircraft. The amendment also permits general aviation operators

Costs

Any cost associated with defining “shore” in § 91.205 as the high water line is expected to be negligible. The only parties potentially affected are small for-hire operators who do not comply with the obvious intention of the rule as presently worded. The FAA believes these operators are very few (probably less than 20 operators) in number. Such operators are likely to be traversing tidal flats in areas like Alaska. If such operators do not comply with the rule as written now, then the cost of compliance would be a maximum of about \$105 per year per aircraft. This assumes a \$50 cost for an approved flotation device per seat and a flotation device useful life of 5 years (\$10 per passenger seat per year), 10 seats per aircraft for these specific operators, plus \$5 per year per aircraft for a pyrotechnic signaling device.

Section 91.409 allows operators of turbine-powered rotorcraft to use alternate inspection programs such as inspections under an FAA-approved continuous airworthiness maintenance program. The operators may now schedule inspections in a manner that allows the highest level of utilization of their rotorcraft.

The FAA estimates that in 1984 there were approximately 3,000 active turbine-powered rotorcraft in non-air taxi use. The FAA assumes that about one-half of the operators of these aircraft would use the new inspection options.

The value of using these options is difficult to estimate. At a minimum, the major effect of this proposed rule would be one additional day per year of rotorcraft utility. The usefulness of this can be set at least at the cost of capital for 1 day. Using an average aircraft value of \$300,000 and a use of 250 days per year, the cost of capital can be estimated at \$180 per day (\$300,000 at 15 percent interest divided by 250 days). Thus, the minimum benefit is approximately \$0.27 million per year (half the fleet, 1500 turbine-powered rotorcraft times \$180). As the fleet grows, the value of this benefit also increases.

Because of the reorganization and resulting renumbering of provisions, persons who regularly refer to existing Part 91 must familiarize themselves with the new structure. It is also recognized that many non-regulatory materials containing references to present Part 91 sections may have to be modified. To assist in reference to the new provisions, a redesignation table, similar to the cross-reference table published herein, will be included in subsequent editions of the Code of Federal Regulations. The FAA believes that any short-term costs associated with transition to the reorganized Part 91 will be outweighed by the benefits inherent in a more logically organized set of regulations.

Trade Impact

The FAA has determined that this regulation will have no impact on international trade.

Regulatory Flexibility Determination

The Regulatory Flexibility Act (RFA) of 1980 was enacted by Congress in order to insure, among other things, that small entities are not disproportionately affected by Government regulations. The RFA requires agencies to review rules which may have a “significant economic impact on a substantial number of small entities.” As discussed above, the regulatory evaluation for Part 91 indicates that there are no negative or significant economic impacts associated with the proposed rule.

All but four of the changes to Part 91 are editorial or clarifying changes. Three of the four changes result only in minimal benefits being applied. The other is a change to § 91.205 which, while it is basically clarifying, may involve some minimal cost and benefit. Any economic impact would be minor—approximately \$100 per aircraft per year, and would affect only a few small for-hire operators in Alaska who do not comply with the intent of the rule as presently worded. Thus, the change could not be construed to cause “significant economic impact on a substantial number” of small entities within the meaning of the RFA. Therefore, this rule will not have a significant economic impact on a substantial number of small entities.

Conclusion

The FAA has determined that this document is not considered major under Executive Order 12291 or significant under Department of Transportation Regulatory Policies and Procedures (44 FR 11034; February 26, 1979). It causes only four minor changes, three of which will provide benefits with no additional costs to the aviation public. The fourth will impose negligible costs which are substantially outweighed by the benefits provided. Other amendments provide general benefits by deleting obsolete requirements, relaxing certain operating and flight rule requirements, and updating and clarifying the text. Under the provisions of Executive Order 12291, the amendments in this final rule will not have a major economic effect on consumers; industries; Federal, State, or local government agencies; or geographic

Costs

Any cost associated with defining “shore” in § 91.205 as the high water line is expected to be negligible. The only parties potentially affected are small for-hire operators who do not comply with the obvious intention of the rule as presently worded. The FAA believes these operators are very few (probably less than 20 operators) in number. Such operators are likely to be traversing tidal flats in areas like Alaska. If such operators do not comply with the rule as written now, then the cost of compliance would be a maximum of about \$105 per year per aircraft. This assumes a \$50 cost for an approved flotation device per seat and a flotation device useful life of 5 years (\$10 per passenger seat per year), 10 seats per aircraft for these specific operators, plus \$5 per year per aircraft for a pyrotechnic signaling device.

Section 91.409 allows operators of turbine-powered rotorcraft to use alternate inspection programs such as inspections under an FAA-approved continuous airworthiness maintenance program. The operators may now schedule inspections in a manner that allows the highest level of utilization of their rotorcraft.

The FAA estimates that in 1984 there were approximately 3,000 active turbine-powered rotorcraft in non-air taxi use. The FAA assumes that about one-half of the operators of these aircraft would use the new inspection options.

The value of using these options is difficult to estimate. At a minimum, the major effect of this proposed rule would be one additional day per year of rotorcraft utility. The usefulness of this can be set at least at the cost of capital for 1 day. Using an average aircraft value of \$300,000 and a use of 250 days per year, the cost of capital can be estimated at \$180 per day (\$300,000 at 15 percent interest divided by 250 days). Thus, the minimum benefit is approximately \$0.27 million per year (half the fleet, 1500 turbine-powered rotorcraft times \$180). As the fleet grows, the value of this benefit also increases.

Because of the reorganization and resulting renumbering of provisions, persons who regularly refer to existing Part 91 must familiarize themselves with the new structure. It is also recognized that many non-regulatory materials containing references to present Part 91 sections may have to be modified. To assist in reference to the new provisions, a redesignation table, similar to the cross-reference table published herein, will be included in subsequent editions of the Code of Federal Regulations. The FAA believes that any short-term costs associated with transition to the reorganized Part 91 will be outweighed by the benefits inherent in a more logically organized set of regulations.

Trade Impact

The FAA has determined that this regulation will have no impact on international trade.

Regulatory Flexibility Determination

The Regulatory Flexibility Act (RFA) of 1980 was enacted by Congress in order to insure, among other things, that small entities are not disproportionately affected by Government regulations. The RFA requires agencies to review rules which may have a “significant economic impact on a substantial number of small entities.” As discussed above, the regulatory evaluation for Part 91 indicates that there are no negative or significant economic impacts associated with the proposed rule.

All but four of the changes to Part 91 are editorial or clarifying changes. Three of the four changes result only in minimal benefits being applied. The other is a change to § 91.205 which, while it is basically clarifying, may involve some minimal cost and benefit. Any economic impact would be minor—approximately \$100 per aircraft per year, and would affect only a few small for-hire operators in Alaska who do not comply with the intent of the rule as presently worded. Thus, the change could not be construed to cause “significant economic impact on a substantial number” of small entities within the meaning of the RFA. Therefore, this rule will not have a significant economic impact on a substantial number of small entities.

Conclusion

The FAA has determined that this document is not considered major under Executive Order 12291 or significant under Department of Transportation Regulatory Policies and Procedures (44 FR 11034; February 26, 1979). It causes only four minor changes, three of which will provide benefits with no additional costs to the aviation public. The fourth will impose negligible costs which are substantially outweighed by the benefits provided. Other amendments provide general benefits by deleting obsolete requirements, relaxing certain operating and flight rule requirements, and updating and clarifying the text. Under the provisions of Executive Order 12291, the amendments in this final rule will not have a major economic effect on consumers; industries; Federal, State, or local government agencies; or geographic

Cross Reference Table-Continued

Old Section	New Section
91.59	91.321
91.61	91.101
91.63	91.903
91.65	91.111 and 91.123
91.67	91.113
91.69	91.115
91.70	91.117
91.71	91.303
91.73	91.209
91.75	91.123
91.77	91.125
91.79	91.119
91.81	91.121
91.83	91.153 and 91.169
91.84	91.707
91.85	91.127
91.87	91.129
91.88	91.130
91.89	91.127
91.90	91.131
91.91	91.137
91.93	91.305
91.95	91.133
91.97	91.135
91.100	91.139
91.101	91.709
91.102	91.143
91.103	91.713
91.104	91.141
91.105	91.155
91.107	91.157
91.109	91.159
91.115	91.173
91.116	91.175
91.117	Deleted
91.119	91.177
91.121	91.179
91.123	91.181
91.125	91.183
91.127	91.185
91.129	91.187
91.161	91.401
91.163	91.403
91.165	91.405
91.167	91.407
91.169	91.409
91.170	91.415
91.171	91.411
91.172	91.413
91.173	91.417
91.174	91.419
91.175	91.421
91.181	91.501
91.183	91.503
91.185	91.505
91.187	91.507
91.189	91.509
91.191	91.511
91.193	91.513
91.195	91.515
91.197	91.517
91.199	91.519
91.200	91.521
91.201	91.523
91.203	91.525
91.205	Deleted

Cross Reference Table-Continued

Old Section	New Section
91.59	91.321
91.61	91.101
91.63	91.903
91.65	91.111 and 91.123
91.67	91.113
91.69	91.115
91.70	91.117
91.71	91.303
91.73	91.209
91.75	91.123
91.77	91.125
91.79	91.119
91.81	91.121
91.83	91.153 and 91.169
91.84	91.707
91.85	91.127
91.87	91.129
91.88	91.130
91.89	91.127
91.90	91.131
91.91	91.137
91.93	91.305
91.95	91.133
91.97	91.135
91.100	91.139
91.101	91.709
91.102	91.143
91.103	91.713
91.104	91.141
91.105	91.155
91.107	91.157
91.109	91.159
91.115	91.173
91.116	91.175
91.117	Deleted
91.119	91.177
91.121	91.179
91.123	91.181
91.125	91.183
91.127	91.185
91.129	91.187
91.161	91.401
91.163	91.403
91.165	91.405
91.167	91.407
91.169	91.409
91.170	91.415
91.171	91.411
91.172	91.413
91.173	91.417
91.174	91.419
91.175	91.421
91.181	91.501
91.183	91.503
91.185	91.505
91.187	91.507
91.189	91.509
91.191	91.511
91.193	91.513
91.195	91.515
91.197	91.517
91.199	91.519
91.200	91.521
91.201	91.523
91.203	91.525
91.205	Deleted

Cross Reference Table-Continued

New Section	Old Section
91.167	91.23
91.169	91.83
91.171	91.25
91.173	91.115
91.175	91.116
91.177	91.119
91.179	91.121
91.181	91.123
91.183	91.125
91.185	91.127
91.187	91.129
91.189	91.6
91.191	91.34
91.193	91.2
91.201	New
91.203	91.27
91.205	91.33
91.207	91.52
91.209	91.73
91.211	91.32
91.213	91.30
91.215	91.24
91.217	91.36
91.219	91.51
91.221	91.26
91.301	New
91.303	91.71
91.305	91.93
91.307	91.15
91.309	91.17
91.311	91.18
91.313	91.39
91.315	91.40
91.317	91.41
91.319	91.42
91.321	91.59
91.323	91.38
91.401	91.161
91.403	91.163
91.405	91.165
91.407	91.167
91.409	91.169
91.411	91.171
91.413	91.172
91.415	91.170
91.417	91.173
91.419	91.174
91.421	91.175
91.501	91.181
91.503	91.183
91.505	91.185
91.507	91.187
91.509	91.189
91.511	91.191
91.513	91.193
91.515	91.195
91.517	91.197
91.519	91.199
91.521	91.200
91.523	91.201
91.525	91.203
91.527	91.209
91.529	91.211
91.531	91.213
91.533	91.215
91.601	New

Cross Reference Table-Continued

New Section	Old Section
91.167	91.23
91.169	91.83
91.171	91.25
91.173	91.115
91.175	91.116
91.177	91.119
91.179	91.121
91.181	91.123
91.183	91.125
91.185	91.127
91.187	91.129
91.189	91.6
91.191	91.34
91.193	91.2
91.201	New
91.203	91.27
91.205	91.33
91.207	91.52
91.209	91.73
91.211	91.32
91.213	91.30
91.215	91.24
91.217	91.36
91.219	91.51
91.221	91.26
91.301	New
91.303	91.71
91.305	91.93
91.307	91.15
91.309	91.17
91.311	91.18
91.313	91.39
91.315	91.40
91.317	91.41
91.319	91.42
91.321	91.59
91.323	91.38
91.401	91.161
91.403	91.163
91.405	91.165
91.407	91.167
91.409	91.169
91.411	91.171
91.413	91.172
91.415	91.170
91.417	91.173
91.419	91.174
91.421	91.175
91.501	91.181
91.503	91.183
91.505	91.185
91.507	91.187
91.509	91.189
91.511	91.191
91.513	91.193
91.515	91.195
91.517	91.197
91.519	91.199
91.521	91.200
91.523	91.201
91.525	91.203
91.527	91.209
91.529	91.211
91.531	91.213
91.533	91.215
91.601	New

with new office designations. These changes are necessary to make the regulations consistent with the current agency structure.

FOR FURTHER INFORMATION CONTACT: Jean Casciano, Office of Rulemaking (ARM-I), Federal Aviation Administration, 800 Independence Ave., SW., Washington, DC 20591; Telephone (202) 267-9683.

SUPPLEMENTARY INFORMATION

Background

On July 1, 1988, the FAA underwent a far-reaching reorganization that affected both headquarters and regional offices. The most significant change is that certain Regional Divisions and Offices, which formerly reported to the Regional Director, are now under "straight line" authority, meaning that these units within each Regional Office report to the appropriate Associate Administrator (or Chief Counsel) in charge of the function performed by that unit.

Within Part 11 of the Federal Aviation Regulations (FAR), various elements of the FAA have been delegated rulemaking authority by the Administrator. These delegations need to be updated. In addition, throughout the Federal Aviation Regulations references are made to offices that have been renamed or are no longer in existence as a result of reorganization.

Title 14 of the Code of Federal Regulations must therefore be amended to reflect the reorganizations and changes that have taken place.

Paperwork Reduction Act

The paperwork requirements in sections being amended by this document have already been approved. There will be no increase or decrease in paperwork requirements as a result of these amendments, since the changes are completely editorial in nature.

Good Cause Justification for Immediate Adoption

This amendment is needed to avoid possible confusion about the FAA reorganization and to hasten the effective implementation of the reorganization. In view of the need to expedite these changes, and because the amendment is editorial in nature and would impose no additional burden on the public, I find that notice and opportunity for public comment before adopting this amendment is unnecessary.

Federalism Implications

The regulations adopted herein will not have substantial direct effects on the states, on the relationship between the National government and the states, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

Conclusion

The FAA has determined that this document involves an amendment that imposes no additional burden on any person. Accordingly, it has been determined that: The action does not involve a major rule under Executive Order 12291; it is not significant under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and because it is of editorial nature, no impact is expected to result and a full regulatory evaluation is not required. In addition, the FAA certifies that this amendment will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

The Rule

In consideration of the foregoing, the Federal Aviation Administration amends the Federal Aviation Regulations (14 CFR Chapter I) effective October 25, 1989.

The authority citation for Part 45 is revised to read as follows:

Authority: 49 U.S.C. 1348, 1354, 1401, 1402, 1421, and 1423, 1522, 1655(c); (Revised Pub. L. 97-449, January 12, 1983).

with new office designations. These changes are necessary to make the regulations consistent with the current agency structure.

FOR FURTHER INFORMATION CONTACT: Jean Casciano, Office of Rulemaking (ARM-I), Federal Aviation Administration, 800 Independence Ave., SW., Washington, DC 20591; Telephone (202) 267-9683.

SUPPLEMENTARY INFORMATION

Background

On July 1, 1988, the FAA underwent a far-reaching reorganization that affected both headquarters and regional offices. The most significant change is that certain Regional Divisions and Offices, which formerly reported to the Regional Director, are now under "straight line" authority, meaning that these units within each Regional Office report to the appropriate Associate Administrator (or Chief Counsel) in charge of the function performed by that unit.

Within Part 11 of the Federal Aviation Regulations (FAR), various elements of the FAA have been delegated rulemaking authority by the Administrator. These delegations need to be updated. In addition, throughout the Federal Aviation Regulations references are made to offices that have been renamed or are no longer in existence as a result of reorganization.

Title 14 of the Code of Federal Regulations must therefore be amended to reflect the reorganizations and changes that have taken place.

Paperwork Reduction Act

The paperwork requirements in sections being amended by this document have already been approved. There will be no increase or decrease in paperwork requirements as a result of these amendments, since the changes are completely editorial in nature.

Good Cause Justification for Immediate Adoption

This amendment is needed to avoid possible confusion about the FAA reorganization and to hasten the effective implementation of the reorganization. In view of the need to expedite these changes, and because the amendment is editorial in nature and would impose no additional burden on the public, I find that notice and opportunity for public comment before adopting this amendment is unnecessary.

Federalism Implications

The regulations adopted herein will not have substantial direct effects on the states, on the relationship between the National government and the states, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

Conclusion

The FAA has determined that this document involves an amendment that imposes no additional burden on any person. Accordingly, it has been determined that: The action does not involve a major rule under Executive Order 12291; it is not significant under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and because it is of editorial nature, no impact is expected to result and a full regulatory evaluation is not required. In addition, the FAA certifies that this amendment will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

The Rule

In consideration of the foregoing, the Federal Aviation Administration amends the Federal Aviation Regulations (14 CFR Chapter I) effective October 25, 1989.

The authority citation for Part 45 is revised to read as follows:

Authority: 49 U.S.C. 1348, 1354, 1401, 1402, 1421, and 1423, 1522, 1655(c); (Revised Pub. L. 97-449, January 12, 1983).

The EPA concluded that it was necessary to develop a practical interpretation of the requirement for demonstrated compliance by each individual engine and to substitute a preproduction certification program as a compliance procedure in place of compliance testing. The promulgation of such a preproduction certification compliance program has been delegated to the FAA subject to the concurrence of the Administrator of the EPA. The FAA consulted extensively with the EPA on this matter. The EPA concluded that an acceptable preproduction certification compliance program must demonstrate that, at minimum, with 90 percent confidence, 95 percent of the engines would meet the gaseous emission standards, and with 90 percent confidence, every engine would meet the smoke standards. The International Civil Aviation Organization (ICAO), in its Standards and Recommended Practices for Aircraft Engine Emissions, adopted a similar preproduction certification compliance procedure based upon a composite of historical engine-to-engine variability. Since the EPA stressed the desirability of commonality with ICAO, the FAA, with the concurrence of the EPA, adopted the compliance procedure defined in Appendix 6 to ICAO Annex 16, Volume II-Aircraft Engine Emissions, First Edition, June 1981.

The FAA solicited comments and recommendations concerning equivalent procedures in a Notice of Proposed Rulemaking (53 FR 18530, May 23, 1988). No comments were received on the equivalent procedures issue. The FAA will give any future recommendation full consideration if it is accompanied by substantive supporting data demonstrating equivalency. Should an acceptable equivalent procedure be proposed, the FAA will seek EPA concurrence with that proposed equivalent procedure as an alternative compliance procedure. The FAA cannot, however, adopt any proposed compliance procedure unless it has the concurrence of the Administrator of the EPA.

Regulatory History

Under Section 232 of the Clean Air Amendments of 1970, Pub. L. 91-604, the FAA is required to issue regulations that ensure compliance with all aircraft emission standards promulgated under Section 231 of the Act, which are currently prescribed in 40 CFR Part 87 originally issued on July 6, 1973 (38 FR 19088, July 17, 1973). Accordingly, on December 26, 1973, the FAA issued SFAR 27, (38 FR 35427, December 28, 1973). The purpose of SFAR 27 was to ensure compliance with the aircraft and aircraft engine emission standards and test procedures issued by the EPA in 40 CFR Part 87.

SFAR 27, as originally issued, required compliance only with those standards and procedures in 40 CFR Part 87 that were effective beginning February 1, 1974. Since its issuance, SFAR 27 has been amended seven times by the FAA. On December 23, 1974, the FAA issued SFAR 27-1 (39 FR 45008, December 30, 1974) to require compliance with the fuel venting emission standards in 40 CFR Part 87 that became effective January 1, 1975. SFAR 27-2, effective January 1, 1976 (40 FR 55311, November 28, 1975), required compliance with smoke emissions standards in 40 CFR Part 87 applicable to new and in-use aircraft turbofan or turbojet engines with a rated power of 29,000 pounds thrust or greater that are designed for operation on subsonic airplanes. SFAR 27-3 (42 FR 64876, December 29, 1977) required compliance with smoke emission standards in 40 CFR Part 87 for JT3D engines manufactured on and after January 1, 1978. A fourth amendment, SFAR 27-4 (45 FR 71960, October 30, 1980), was issued to require phased compliance with smoke emission standards by in-use JT3D engines beginning on January 1, 1981, with total compliance required by January 1, 1985. Subsequently, the requirement for compliance by in-use JT3D engines was automatically deleted under the terms of SFAR 27, § 3(b), when the EPA deleted the underlying requirement from 40 CFR Part 87 (48 FR 2716, January 20, 1983).

On December 21, 1982, the EPA revised 40 CFR Part 87 and republished the rule in its entirety (47 FR 58462, December 30, 1982). The revised rule contained a number of changes in definitions as well as new standards for smoke and unburned hydrocarbon emissions. The FAA is required by 40 CFR Section 87.89 to establish and approve a testing program to assure compliance with Part 87 by January 1, 1984. On December 8, 1983, the FAA issued amended SFAR 27-5 (48 FR 56735, December 23, 1983) which required compliance with all of the provisions of revised 40 CFR Part 87 and contained an EPA-approved testing program. The effective date of SFAR 27-5 was January 1, 1984. On October 4, 1983, the EPA issued a stay of the January 1, 1984, effective date for EPA's smoke standards, applicable to aircraft turbine engines rated below 26.7 kilonewtons (kN) (6000 pounds) thrust in response to a petition by the General Aviation Manufacturers Association (GAMA) (48 FR 46481, October 12, 1983). On July 30, 1984, the EPA denied the GAMA petition and established an August 9, 1985, effective date for smoke standards applicable to aircraft turbine engines rated below 26.7 kN (49 FR 31873, August 9, 1984). On October 9, 1984, the EPA changed the definition of "very low production" engines in the provisions for exemptions and revised the exhaust emission test fuel specification (49 FR 41000, October 18, 1984). On March 18, 1986, the FAA amended SFAR 27-5 to correct the authority citations for petitions for exemptions to SFAR 27-5 (51 FR 10612, March 28, 1986). On September 15, 1989, the FAA amended SFAR 27-5 to reflect delegations of authority that were affected by a recent agencywide reorganization (54 FR 39288, September 25, 1989).

The EPA concluded that it was necessary to develop a practical interpretation of the requirement for demonstrated compliance by each individual engine and to substitute a preproduction certification program as a compliance procedure in place of compliance testing. The promulgation of such a preproduction certification compliance program has been delegated to the FAA subject to the concurrence of the Administrator of the EPA. The FAA consulted extensively with the EPA on this matter. The EPA concluded that an acceptable preproduction certification compliance program must demonstrate that, at minimum, with 90 percent confidence, 95 percent of the engines would meet the gaseous emission standards, and with 90 percent confidence, every engine would meet the smoke standards. The International Civil Aviation Organization (ICAO), in its Standards and Recommended Practices for Aircraft Engine Emissions, adopted a similar preproduction certification compliance procedure based upon a composite of historical engine-to-engine variability. Since the EPA stressed the desirability of commonality with ICAO, the FAA, with the concurrence of the EPA, adopted the compliance procedure defined in Appendix 6 to ICAO Annex 16, Volume II-Aircraft Engine Emissions, First Edition, June 1981.

The FAA solicited comments and recommendations concerning equivalent procedures in a Notice of Proposed Rulemaking (53 FR 18530, May 23, 1988). No comments were received on the equivalent procedures issue. The FAA will give any future recommendation full consideration if it is accompanied by substantive supporting data demonstrating equivalency. Should an acceptable equivalent procedure be proposed, the FAA will seek EPA concurrence with that proposed equivalent procedure as an alternative compliance procedure. The FAA cannot, however, adopt any proposed compliance procedure unless it has the concurrence of the Administrator of the EPA.

Regulatory History

Under Section 232 of the Clean Air Amendments of 1970, Pub. L. 91-604, the FAA is required to issue regulations that ensure compliance with all aircraft emission standards promulgated under Section 231 of the Act, which are currently prescribed in 40 CFR Part 87 originally issued on July 6, 1973 (38 FR 19088, July 17, 1973). Accordingly, on December 26, 1973, the FAA issued SFAR 27, (38 FR 35427, December 28, 1973). The purpose of SFAR 27 was to ensure compliance with the aircraft and aircraft engine emission standards and test procedures issued by the EPA in 40 CFR Part 87.

SFAR 27, as originally issued, required compliance only with those standards and procedures in 40 CFR Part 87 that were effective beginning February 1, 1974. Since its issuance, SFAR 27 has been amended seven times by the FAA. On December 23, 1974, the FAA issued SFAR 27-1 (39 FR 45008, December 30, 1974) to require compliance with the fuel venting emission standards in 40 CFR Part 87 that became effective January 1, 1975. SFAR 27-2, effective January 1, 1976 (40 FR 55311, November 28, 1975), required compliance with smoke emissions standards in 40 CFR Part 87 applicable to new and in-use aircraft turbofan or turbojet engines with a rated power of 29,000 pounds thrust or greater that are designed for operation on subsonic airplanes. SFAR 27-3 (42 FR 64876, December 29, 1977) required compliance with smoke emission standards in 40 CFR Part 87 for JT3D engines manufactured on and after January 1, 1978. A fourth amendment, SFAR 27-4 (45 FR 71960, October 30, 1980), was issued to require phased compliance with smoke emission standards by in-use JT3D engines beginning on January 1, 1981, with total compliance required by January 1, 1985. Subsequently, the requirement for compliance by in-use JT3D engines was automatically deleted under the terms of SFAR 27, § 3(b), when the EPA deleted the underlying requirement from 40 CFR Part 87 (48 FR 2716, January 20, 1983).

On December 21, 1982, the EPA revised 40 CFR Part 87 and republished the rule in its entirety (47 FR 58462, December 30, 1982). The revised rule contained a number of changes in definitions as well as new standards for smoke and unburned hydrocarbon emissions. The FAA is required by 40 CFR Section 87.89 to establish and approve a testing program to assure compliance with Part 87 by January 1, 1984. On December 8, 1983, the FAA issued amended SFAR 27-5 (48 FR 56735, December 23, 1983) which required compliance with all of the provisions of revised 40 CFR Part 87 and contained an EPA-approved testing program. The effective date of SFAR 27-5 was January 1, 1984. On October 4, 1983, the EPA issued a stay of the January 1, 1984, effective date for EPA's smoke standards, applicable to aircraft turbine engines rated below 26.7 kilonewtons (kN) (6000 pounds) thrust in response to a petition by the General Aviation Manufacturers Association (GAMA) (48 FR 46481, October 12, 1983). On July 30, 1984, the EPA denied the GAMA petition and established an August 9, 1985, effective date for smoke standards applicable to aircraft turbine engines rated below 26.7 kN (49 FR 31873, August 9, 1984). On October 9, 1984, the EPA changed the definition of "very low production" engines in the provisions for exemptions and revised the exhaust emission test fuel specification (49 FR 41000, October 18, 1984). On March 18, 1986, the FAA amended SFAR 27-5 to correct the authority citations for petitions for exemptions to SFAR 27-5 (51 FR 10612, March 28, 1986). On September 15, 1989, the FAA amended SFAR 27-5 to reflect delegations of authority that were affected by a recent agencywide reorganization (54 FR 39288, September 25, 1989).

Comments pertaining to the new Part 34:

Based on the comments received, a definition for “reference day conditions” was added to § 34.1, and § 34.1 definitions for “date of manufacture,” “aircraft,” and “Administrator” were amended for clarity or to conform with an existing definition of the term in use in the FARs.

Several of the comments pertained to typographical errors in the NPRM and the inclusion of additional terms in the abbreviations table in § 34.2. The commenters’ recommended changes were adopted in the final rule.

Regarding the proposed § 34.60(b), a commenter suggested that the requirement to use a dynamometer for engines producing shaft power is unduly restrictive. The commenter stated that acceptance testing of most new turboprop engines is done using a propeller with either a calibrated test-stand torquemeter or the engine’s integral torque measuring device. The commenter concluded that if these devices are acceptable to the FAA for determining an engine’s power output they should be equally acceptable for the Part 34 tests. The comment was not adopted in the final rule. The requirement for the dynamometer was established by the EPA in 40 CFR 87.60(b). The FAA may, however, approve alternative test procedures under the provisions of § 34.3(a) or § 34.5 if proper applications are submitted. Part 34 reflects, and must continue to reflect, the requirements of 40 CFR Part 87.60(b).

One commenter indicated that the turbine fuel specifications contained in proposed § 34.61 are not consistent with the latest American Society for Testing Materials (ASTM) recommendations. In response, the FAA notes that the EPA initially adopted the turbine fuel specifications identical to those contained in Appendix 4 of Volume 2 of ICAO Annex 16. However, after much consideration, the EPA subsequently revised the fuel specifications (47 FR 58462, December 30, 1982). As required, 14 CFR Part 34 must directly adopt the revised EPA fuel specification (with the exception of a correction of a typographical error in the units of measure for kinematic viscosity). It should be noted that § 34.61 fuel specifications are more stringent than the fuel specifications in Appendix 4 of Volume 2 of ICAO Annex 16.

Section 34.7 states that all petitions for rulemaking involving either the substance of an emission standard or test procedure prescribed by the EPA, or a compliance date for such standard or procedure, must be submitted to the EPA. As stated in the NPRM (53 FR 18530, May 23, 1988), informational copies of such petitions are invited by the FAA. One commenter wrote that to invite rather than require is ambiguous and would set an undesirable precedent. The commenter concluded that if copies of the petition are not required, the provision to invite informational copies of the petition should be removed from the regulation. The commenter’s suggestion has not been adopted in the final rule. The FAA feels that the invited information copies will expedite the required consultation process between the FAA and the EPA in order to determine if action on such petitions requires rulemaking under Sections 231 and 232 of the Clean Air Act, as amended.

One commenter was concerned that the fuel venting and exhaust emission requirements of Part 34 would be applied to auxiliary power unit (APU) installations through the requirements of Parts 23 and 25. The EPA proposed to withdraw emission control requirements from APU’s in 1978 (43 FR 12615, March 24, 1978) and omitted APU emission control requirements from their final rule (47 FR 58462, December 30, 1982). Therefore, the FAA does not intend to impose Part 34 requirements on APUs.

A commenter suggested that where engine power is expressed in kilonewton(the equivalent in pounds of thrust should also be shown. The suggestion has merit and was adopted in the final rule.

Several commenters suggested changes in the arrangement of Part 34 sections and deletion of certain wording as a means of simplifying Part 34 without affecting the content of 40 CFR Part 87. The suggestions were not adopted in the final rule. The FAA chose to incorporate, to the maximum extent possible, the substantive portions of 40 CFR Part 87 into 14 CFR Part 34 on a word-for-word and section-to-section basis in order to maintain consistency between the two bodies of rules.

One commenter requested assurance from the FAA that the new Part 34 would not place any new or additional regulatory burden on owners/operators of in-use JT3D engines manufactured before 1978. New Part 34 is intended to codify only the provisions of Special Federal Aviation Regulation (SFAR) 27-5, and the EPA standards and test procedures contained in 40 CFR Part 87. New Part 34 does not place any new or additional regulatory burden on owners/operators of any aircraft or aircraft engines; it merely recodifies the existing rules of SFAR 27 and 40 CFR Part 87. This includes in-use JT3D engines manufactured before 1978. There is no requirement in new Part 34 to retrofit in-use JT3D engines manufactured before 1978.

Comments pertaining to the new Part 34:

Based on the comments received, a definition for “reference day conditions” was added to § 34.1, and § 34.1 definitions for “date of manufacture,” “aircraft,” and “Administrator” were amended for clarity or to conform with an existing definition of the term in use in the FARs.

Several of the comments pertained to typographical errors in the NPRM and the inclusion of additional terms in the abbreviations table in § 34.2. The commenters’ recommended changes were adopted in the final rule.

Regarding the proposed § 34.60(b), a commenter suggested that the requirement to use a dynamometer for engines producing shaft power is unduly restrictive. The commenter stated that acceptance testing of most new turboprop engines is done using a propeller with either a calibrated test-stand torquemeter or the engine’s integral torque measuring device. The commenter concluded that if these devices are acceptable to the FAA for determining an engine’s power output they should be equally acceptable for the Part 34 tests. The comment was not adopted in the final rule. The requirement for the dynamometer was established by the EPA in 40 CFR 87.60(b). The FAA may, however, approve alternative test procedures under the provisions of § 34.3(a) or § 34.5 if proper applications are submitted. Part 34 reflects, and must continue to reflect, the requirements of 40 CFR Part 87.60(b).

One commenter indicated that the turbine fuel specifications contained in proposed § 34.61 are not consistent with the latest American Society for Testing Materials (ASTM) recommendations. In response, the FAA notes that the EPA initially adopted the turbine fuel specifications identical to those contained in Appendix 4 of Volume 2 of ICAO Annex 16. However, after much consideration, the EPA subsequently revised the fuel specifications (47 FR 58462, December 30, 1982). As required, 14 CFR Part 34 must directly adopt the revised EPA fuel specification (with the exception of a correction of a typographical error in the units of measure for kinematic viscosity). It should be noted that § 34.61 fuel specifications are more stringent than the fuel specifications in Appendix 4 of Volume 2 of ICAO Annex 16.

Section 34.7 states that all petitions for rulemaking involving either the substance of an emission standard or test procedure prescribed by the EPA, or a compliance date for such standard or procedure, must be submitted to the EPA. As stated in the NPRM (53 FR 18530, May 23, 1988), informational copies of such petitions are invited by the FAA. One commenter wrote that to invite rather than require is ambiguous and would set an undesirable precedent. The commenter concluded that if copies of the petition are not required, the provision to invite informational copies of the petition should be removed from the regulation. The commenter’s suggestion has not been adopted in the final rule. The FAA feels that the invited information copies will expedite the required consultation process between the FAA and the EPA in order to determine if action on such petitions requires rulemaking under Sections 231 and 232 of the Clean Air Act, as amended.

One commenter was concerned that the fuel venting and exhaust emission requirements of Part 34 would be applied to auxiliary power unit (APU) installations through the requirements of Parts 23 and 25. The EPA proposed to withdraw emission control requirements from APU’s in 1978 (43 FR 12615, March 24, 1978) and omitted APU emission control requirements from their final rule (47 FR 58462, December 30, 1982). Therefore, the FAA does not intend to impose Part 34 requirements on APUs.

A commenter suggested that where engine power is expressed in kilonewton(s), the equivalent in pounds of thrust should also be shown. The suggestion has merit and was adopted in the final rule.

Several commenters suggested changes in the arrangement of Part 34 sections and deletion of certain wording as a means of simplifying Part 34 without affecting the content of 40 CFR Part 87. The suggestions were not adopted in the final rule. The FAA chose to incorporate, to the maximum extent possible, the substantive portions of 40 CFR Part 87 into 14 CFR Part 34 on a word-for-word and section-to-section basis in order to maintain consistency between the two bodies of rules.

One commenter requested assurance from the FAA that the new Part 34 would not place any new or additional regulatory burden on owners/operators of in-use JT3D engines manufactured before 1978. New Part 34 is intended to codify only the provisions of Special Federal Aviation Regulation (SFAR) 27-5, and the EPA standards and test procedures contained in 40 CFR Part 87. New Part 34 does not place any new or additional regulatory burden on owners/operators of any aircraft or aircraft engines; it merely recodifies the existing rules of SFAR 27 and 40 CFR Part 87. This includes in-use JT3D engines manufactured before 1978. There is no requirement in new Part 34 to retrofit in-use JT3D engines manufactured before 1978.

impose any new regulations and, thus, will not have a significant economic impact, either detrimental or beneficial, on affected operators. Consequently, the FAA determines that, under the criteria of the Regulatory Flexibility Act of 1980, a regulatory flexibility analysis is not required.

Environmental Analysis

Pursuant to Department of Transportation, "Policies and Procedures for Considering Environmental Impacts" (FAA Order 1050.1D, Appendix 7, paragraph 4, Change 3, December 5, 1986), the FAA is categorically excluded from providing an environmental analysis with regard to Part 34 because it is mandated by law to issue regulations to ensure compliance with the EPA aircraft emissions standards and the EPA has performed all required environmental analyses prior to the issuance of those standards.

Federalism Implications

The regulations adopted herein will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this final rule will not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

Conclusion

The FAA has determined that this document involves regulations which are not considered to be major under the procedures and criteria prescribed in Executive Order 12291. The rule is considered not significant under Department of Transportation Regulatory Policies and Procedures (44 FR 11034 February 26, 1979). A copy of the evaluation prepared for this action is contained in the regulatory docket. A copy of the evaluation may be obtained from the person identified in the section entitled "FOR FURTHER INFORMATION CONTACT." For the reasons stated in the regulatory evaluation I certify that these regulations, if promulgated, will not have a significant economic impact on a substantial number of small entities. In addition, these proposals, if adopted, would have little or no impact on trade opportunities for U.S. firms doing business overseas or for foreign firms doing business in the United States.

The Final Rule

Accordingly, the FAA amends 14 CFR, Chapter I, by amending Parts 11, 21, 23, 25, 33, 43, 45, and 91, and adding a new Part 34 effective September 10, 1990.

The authority citation for Part 45 reads as follows:

Authority: 49 U.S.C. 1348, 1354, 1401, 1402, 1421, 1423, and 1522; 49 U.S.C. 106(g) (Revised Pub L. 97-449, January 12, 1983).

impose any new regulations and, thus, will not have a significant economic impact, either detrimental or beneficial, on affected operators. Consequently, the FAA determines that, under the criteria of the Regulatory Flexibility Act of 1980, a regulatory flexibility analysis is not required.

Environmental Analysis

Pursuant to Department of Transportation, "Policies and Procedures for Considering Environmental Impacts" (FAA Order 1050.1D, Appendix 7, paragraph 4, Change 3, December 5, 1986), the FAA is categorically excluded from providing an environmental analysis with regard to Part 34 because it is mandated by law to issue regulations to ensure compliance with the EPA aircraft emissions standards and the EPA has performed all required environmental analyses prior to the issuance of those standards.

Federalism Implications

The regulations adopted herein will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this final rule will not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

Conclusion

The FAA has determined that this document involves regulations which are not considered to be major under the procedures and criteria prescribed in Executive Order 12291. The rule is considered not significant under Department of Transportation Regulatory Policies and Procedures (44 FR 11034 February 26, 1979). A copy of the evaluation prepared for this action is contained in the regulatory docket. A copy of the evaluation may be obtained from the person identified in the section entitled "FOR FURTHER INFORMATION CONTACT." For the reasons stated in the regulatory evaluation I certify that these regulations, if promulgated, will not have a significant economic impact on a substantial number of small entities. In addition, these proposals, if adopted, would have little or no impact on trade opportunities for U.S. firms doing business overseas or for foreign firms doing business in the United States.

The Final Rule

Accordingly, the FAA amends 14 CFR, Chapter I, by amending Parts 11, 21, 23, 25, 33, 43, 45, and 91, and adding a new Part 34 effective September 10, 1990.

The authority citation for Part 45 reads as follows:

Authority: 49 U.S.C. 1348, 1354, 1401, 1402, 1421, 1423, and 1522; 49 U.S.C. 106(g) (Revised Pub L. 97-449, January 12, 1983).

areas. The recommendations formed the basis of three separate advance notices of proposed rulemaking (ANPRM): Notice No. 85-4, Terminal Airspace Reclassification (50 FR 5055; February 2, 1985); Notice No. 85-5, Airspace Reclassification/Services/Requirements (50 FR 5046; February 2, 1985); and Notice No. 85-15, Controlled Airspace Designations in International Airspace (50 FR 30798; July 7, 1985).

On March 12, 1990, ICAO through its Air Navigation Commission (ANC) formally adopted the airspace classification concept in Amendment No. 33 to Annex 11. The airspace classifications adopted by ICAO, along with the nearest equivalent U.S. airspace designations, are summarized as follows:

Class A Airspace (U.S. Positive Control Areas). All operations must be conducted under instrument flight rules (IFR) and are subject to ATC clearances and instructions. ATC separation is provided to all aircraft.

Class B Airspace (U.S. Terminal Control Areas). Operations may be conducted under IFR, special visual flight rules (SVFR), or VFR. However, all aircraft are subject to ATC clearances and instructions. ATC separation is provided to all aircraft.

Class C Airspace (U.S. Airport Radar Service Areas). Operations may be conducted under IFR, SVFR, or VFR; however, all aircraft are subject to ATC clearances and instructions. ATC separation is provided to all aircraft operating under IFR or SVFR and, as necessary, to any aircraft operating under VFR when any aircraft operating under IFR is involved. All VFR operations will be provided with safety alerts and, upon request, conflict resolution instructions.

Class D Airspace (U.S. Control Zones for Airports with Operating Control Towers and Airport Traffic Areas that are not associated with a TCA or an ARSA). Operations may be conducted under IFR, SVFR, or VFR; however, all aircraft are subject to ATC clearances and instructions. ATC separation is provided to aircraft operating under IFR or SVFR only. All traffic will receive safety alerts and, on pilot request, conflict resolution instructions.

Class E Airspace (U.S. General Controlled Airspace). Operations may be conducted under IFR, SVFR, or VFR. ATC separation is provided only to aircraft operating under IFR and SVFR within a surface area. As far as practical, ATC may provide safety alerts to aircraft operating under VFR.

Class F Airspace (U.S. Has No Equivalent). Operations may be conducted under IFR or VFR. ATC separation will be provided, so far as practical, to aircraft operating under IFR.

Class G Airspace (U.S. Uncontrolled Airspace). Operations may be conducted under IFR or VFR. ATC separation is not provided.

Discussion of the Amendments and Public Comments

This final rule is based on Notice of Proposed Rulemaking (NPRM) No. 89-28 (54 FR 42916; October 18, 1989). The rule amends Parts 1, 11, 45, 61, 65, 71, 75, 91, 93, 101, 103, 105, 121, 127, 135, 137, 139, and 171 and Special Federal Aviation Regulations (SFAR) 51-1, 60, and 62. These parts either incorporate airspace designations and operating rules or amend the existing rule to meet the new classification language.

Amendments to Part 1 delete the definition of an "airport traffic area" and add definitions of "Special VFR conditions" and "Special VFR operations."

The amendments to Part 71 establish a new Subpart M-Jet Routes and Area High Routes that includes the existing rules in Part 75 as of December 17, 1991; revise §§ 71.11 and 71.19 as of October 15, 1992; and revise all of Part 71 to reclassify U.S. airspace in accordance with the ICAO designations as of September 16, 1993. (Further information on the amendments to Part 71 appears in this discussion under Revisions to Part 71.) Under this amendment the positive control areas (PCAs), jet routes, and area high routes are reclassified as Class A airspace areas; TCAs are reclassified as Class B airspace areas; ARSAs are reclassified as Class C airspace areas; control zones for airports with operating control towers and airport traffic areas that are not associated with the primary airport of a TCA or an ARSA are reclassified as Class D airspace areas; all Federal airways, the Continental Control Area, control areas associated with jet routes outside the Continental Control Area, additional control areas, control area extensions, control zones for airports without operating control towers, transition areas, and area low routes are reclassified as Class E airspace areas; and airspace which is not otherwise designated as the Continental Control Area, a control area, a control zone, a terminal control area, an airport radar service area, a transition area, or special use airspace is reclassified as Class G airspace. Because airport traffic areas are not classified as airspace areas, this amendment establishes controlled airspace for airports with operating control towers, but without control zones.

areas. The recommendations formed the basis of three separate advance notices of proposed rulemaking (ANPRM): Notice No. 85-4, Terminal Airspace Reclassification (50 FR 5055; February 2, 1985); Notice No. 85-5, Airspace Reclassification/Services/Requirements (50 FR 5046; February 2, 1985); and Notice No. 85-15, Controlled Airspace Designations in International Airspace (50 FR 30798; July 7, 1985).

On March 12, 1990, ICAO through its Air Navigation Commission (ANC) formally adopted the airspace classification concept in Amendment No. 33 to Annex 11. The airspace classifications adopted by ICAO, along with the nearest equivalent U.S. airspace designations, are summarized as follows:

Class A Airspace (U.S. Positive Control Areas). All operations must be conducted under instrument flight rules (IFR) and are subject to ATC clearances and instructions. ATC separation is provided to all aircraft.

Class B Airspace (U.S. Terminal Control Areas). Operations may be conducted under IFR, special visual flight rules (SVFR), or VFR. However, all aircraft are subject to ATC clearances and instructions. ATC separation is provided to all aircraft.

Class C Airspace (U.S. Airport Radar Service Areas). Operations may be conducted under IFR, SVFR, or VFR; however, all aircraft are subject to ATC clearances and instructions. ATC separation is provided to all aircraft operating under IFR or SVFR and, as necessary, to any aircraft operating under VFR when any aircraft operating under IFR is involved. All VFR operations will be provided with safety alerts and, upon request, conflict resolution instructions.

Class D Airspace (U.S. Control Zones for Airports with Operating Control Towers and Airport Traffic Areas that are not associated with a TCA or an ARSA). Operations may be conducted under IFR, SVFR, or VFR; however, all aircraft are subject to ATC clearances and instructions. ATC separation is provided to aircraft operating under IFR or SVFR only. All traffic will receive safety alerts and, on pilot request, conflict resolution instructions.

Class E Airspace (U.S. General Controlled Airspace). Operations may be conducted under IFR, SVFR, or VFR. ATC separation is provided only to aircraft operating under IFR and SVFR within a surface area. As far as practical, ATC may provide safety alerts to aircraft operating under VFR.

Class F Airspace (U.S. Has No Equivalent). Operations may be conducted under IFR or VFR. ATC separation will be provided, so far as practical, to aircraft operating under IFR.

Class G Airspace (U.S. Uncontrolled Airspace). Operations may be conducted under IFR or VFR. ATC separation is not provided.

Discussion of the Amendments and Public Comments

This final rule is based on Notice of Proposed Rulemaking (NPRM) No. 89-28 (54 FR 42916; October 18, 1989). The rule amends Parts 1, 11, 45, 61, 65, 71, 75, 91, 93, 101, 103, 105, 121, 127, 135, 137, 139, and 171 and Special Federal Aviation Regulations (SFAR) 51-1, 60, and 62. These parts either incorporate airspace designations and operating rules or amend the existing rule to meet the new classification language.

Amendments to Part 1 delete the definition of an "airport traffic area" and add definitions of "Special VFR conditions" and "Special VFR operations."

The amendments to Part 71 establish a new Subpart M-Jet Routes and Area High Routes that includes the existing rules in Part 75 as of December 17, 1991; revise §§ 71.11 and 71.19 as of October 15, 1992; and revise all of Part 71 to reclassify U.S. airspace in accordance with the ICAO designations as of September 16, 1993. (Further information on the amendments to Part 71 appears in this discussion under Revisions to Part 71.) Under this amendment the positive control areas (PCAs), jet routes, and area high routes are reclassified as Class A airspace areas; TCAs are reclassified as Class B airspace areas; ARSAs are reclassified as Class C airspace areas; control zones for airports with operating control towers and airport traffic areas that are not associated with the primary airport of a TCA or an ARSA are reclassified as Class D airspace areas; all Federal airways, the Continental Control Area, control areas associated with jet routes outside the Continental Control Area, additional control areas, control area extensions, control zones for airports without operating control towers, transition areas, and area low routes are reclassified as Class E airspace areas; and airspace which is not otherwise designated as the Continental Control Area, a control area, a control zone, a terminal control area, an airport radar service area, a transition area, or special use airspace is reclassified as Class G airspace. Because airport traffic areas are not classified as airspace areas, this amendment establishes controlled airspace for airports with operating control towers, but without control zones.

Revisions to Part 71

Part 71 is revised in three stages.

The first revision creates a new Subpart M-Jet Routes and Area High Routes, comprising §§ 71.601, 71.603, 71.605, 71.607, and 71.609. Under this amendment, the existing information in Part 75 is transferred to new Subpart M of Part 71. Since this amendment does not change any operating rules, it is effective December 12, 1991. Section 75.17, Bearings; radials; miles, is not transferred to new Subpart M, because the same information is located in existing § 71.19. NPRM No. 89-28 proposed to amend existing § 75.13. The proposed language is adopted in new § 71.605. A chart comparing old Part 75 and new Part 71, Subpart M follows.

Part 75—Establishment of Jet Routes & Area High Routes		Part 71, Subpart M-Jet Routes & Area High Routes	
§ 75.1	Applicability.	§ 71.601	Applicability.
§ 75.11	Jet routes.	§ 71.603	Jet routes.
§ 75.13	Area routes above 18,000 feet MSL.	§ 71.605	Area routes above 18,000 feet MSL.
§ 75.100	Jet routes.	§ 71.607	Jet route descriptions.
§ 75.400	Area high routes.	§ 71.609	Area high route descriptions.

Sections 71.607, Jet route descriptions, and 71.609, Area high route descriptions are not set forth in the full text of this final rule. The complete listing for all jet routes and area high routes can be found in FAA Order 7400.7, *Compilation of Regulations*, which was last published as of April 30, 1991, and effective November 1, 1991. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies of this order may be obtained from the Document Inspection Facility, APA-220, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, D.C. 20591, (202) 267-3484. Copies may be inspected in Docket Number 24456 at the Federal Aviation Administration, Office of the Chief Counsel, AGC-10, Room 915G, 800 Independence Avenue, SW., Washington, D.C. 20591 weekdays between 8:30 a.m. and 5 p.m. or at the Office of the Federal Register, 1100 L Street, N.W., Room 8401, Washington, D.C. The Part 75 sections referenced in FAA Order 7400.7 will be redesignated as Part 71 sections in the next revision to FAA Order 7400.7.

The second revision amends existing § 71.11, Control zone, and § 71.19, Bearings; radials; miles, and is effective October 15, 1992. This revision relates to the FAA's parallel reviews of certain airspace areas. The revision to § 71.11 permits the Administrator to terminate the vertical limit of a control zone at a specified altitude. The revision to § 71.19 provides for the conversion from statute miles to nautical miles and consists of the same language as § 71.7 that is effective September 16, 1993. More detail on the review of certain airspace areas is found under the title *Implementation of Airspace Reclassification*.

The third revision to Part 71 establishes a new Part 71 that includes the adopted airspace designations. This amendment, which is effective September 16, 1993, transfers the current sections of existing Part 71, including Subpart M-Jet Routes and Area High Routes, to this new Part 71. The following table lists the sections of existing Part 71, including Subpart M and the corresponding sections in the new Part 71, that are effective September 16, 1993. Subparts B through K and §§ 71.501(b), 71.607, and 71.609, which list airspace descriptions, are not set forth in the full text of this final rule. The complete listing for these airspace designations can be found in FAA Order 7400.9, *Airspace Reclassification*, which is effective September 16, 1993. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies of this order may be obtained from the Document Inspection Facility, APA-220, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, D.C. 20591, (202) 267-3484. Copies may be inspected in Docket Number 24456 at the Federal Aviation Administration, Office of the Chief Counsel, AGC-10, Room 915G, 800 Independence Avenue, SW., Washington, D.C. 20591 weekdays between 8:30 a.m. and 5 p.m. or at the Office of the Federal Register, 1100 L Street, N.W., Room 8401, Washington, D.C.

Existing Part 71

Subpart A-General

Revised Part 71 that is effective September 16, 1993, and FAA Order 7400.9

Subpart A-General; Class A airspace

Revisions to Part 71

Part 71 is revised in three stages.

The first revision creates a new Subpart M-Jet Routes and Area High Routes, comprising §§ 71.601, 71.603, 71.605, 71.607, and 71.609. Under this amendment, the existing information in Part 75 is transferred to new Subpart M of Part 71. Since this amendment does not change any operating rules, it is effective December 12, 1991. Section 75.17, Bearings; radials; miles, is not transferred to new Subpart M, because the same information is located in existing § 71.19. NPRM No. 89-28 proposed to amend existing § 75.13. The proposed language is adopted in new § 71.605. A chart comparing old Part 75 and new Part 71, Subpart M follows.

Part 75—Establishment of Jet Routes & Area High Routes		Part 71, Subpart M-Jet Routes & Area High Routes	
§ 75.1	Applicability.	§ 71.601	Applicability.
§ 75.11	Jet routes.	§ 71.603	Jet routes.
§ 75.13	Area routes above 18,000 feet MSL.	§ 71.605	Area routes above 18,000 feet MSL.
§ 75.100	Jet routes.	§ 71.607	Jet route descriptions.
§ 75.400	Area high routes.	§ 71.609	Area high route descriptions.

Sections 71.607, Jet route descriptions, and 71.609, Area high route descriptions are not set forth in the full text of this final rule. The complete listing for all jet routes and area high routes can be found in FAA Order 7400.7, *Compilation of Regulations*, which was last published as of April 30, 1991, and effective November 1, 1991. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies of this order may be obtained from the Document Inspection Facility, APA-220, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, D.C. 20591, (202) 267-3484. Copies may be inspected in Docket Number 24456 at the Federal Aviation Administration, Office of the Chief Counsel, AGC-10, Room 915G, 800 Independence Avenue, SW., Washington, D.C. 20591 weekdays between 8:30 a.m. and 5 p.m. or at the Office of the Federal Register, 1100 L Street, N.W., Room 8401, Washington, DC. The Part 75 sections referenced in FAA Order 7400.7 will be redesignated as Part 71 sections in the next revision to FAA Order 7400.7.

The second revision amends existing § 71.11, Control zone, and § 71.19, Bearings; radials; miles, and is effective October 15, 1992. This revision relates to the FAA's parallel reviews of certain airspace areas. The revision to § 71.11 permits the Administrator to terminate the vertical limit of a control zone at a specified altitude. The revision to § 71.19 provides for the conversion from statute miles to nautical miles and consists of the same language as § 71.7 that is effective September 16, 1993. More detail on the review of certain airspace areas is found under the title *Implementation of Airspace Reclassification*.

The third revision to Part 71 establishes a new Part 71 that includes the adopted airspace designations. This amendment, which is effective September 16, 1993, transfers the current sections of existing Part 71, including Subpart M-Jet Routes and Area High Routes, to this new Part 71. The following table lists the sections of existing Part 71, including Subpart M and the corresponding sections in the new Part 71, that are effective September 16, 1993. Subparts B through K and §§ 71.501(b), 71.607, and 71.609, which list airspace descriptions, are not set forth in the full text of this final rule. The complete listing for these airspace designations can be found in FAA Order 7400.9, *Airspace Reclassification*, which is effective September 16, 1993. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies of this order may be obtained from the Document Inspection Facility, APA-220, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, D.C. 20591, (202) 267-3484. Copies may be inspected in Docket Number 24456 at the Federal Aviation Administration, Office of the Chief Counsel, AGC-10, Room 915G, 800 Independence Avenue, SW., Washington, DC. 20591 weekdays between 8:30 a.m. and 5 p.m. or at the Office of the Federal Register, 1100 L Street, N.W., Room 8401, Washington, D.C.

Existing Part 71

Subpart A-General

Revised Part 71 that is effective September 16, 1993, and FAA Order 7400.9

Subpart A-General; Class A airspace

Subpart E of FAA Order 7400.9.

Subpart G-Transition Areas

§ 71.181 Designation.

Subpart E-Class E Airspace

Subpart E of FAA Order 7400.9.

Subpart H-Positive Control Areas

§ 71.193 Designation.

Subpart A-General; Class A Airspace

§ 71.33 Class A airspace areas.

Subpart I-Reporting Points

§ 71.201 Designation.
 § 71.203 Domestic low altitude reporting points.
 § 71.207 Domestic high altitude reporting points.
 § 71.209 Other domestic reporting points.
 § 71.211 Alaskan low altitude reporting points.
 § 71.213 Alaskan high altitude reporting points.
 § 71.215 Hawaiian reporting points.

Subpart H-Reporting Points

§ 71.901 Applicability.
 Subpart H of FAA Order 7400.9.
 Subpart H of FAA Order 7400.9.
 Subpart H of FAA Order 7400.9.
 Subpart H of FAA Order 7400.9.
 Subpart H of FAA Order 7400.9.
 Subpart H of FAA Order 7400.9.

Subpart J-Area Low Routes

§ 71.301 Designation.

Subpart E-Class E Airspace

Subpart E of FAA Order 7400.9.

Subpart K-Terminal Control Areas

§ 71.401(a) Designation.
 § 71.401(b) Terminal control areas.

Subpart B-Class B Airspace

Subpart B of FAA Order 7400.9.
 Subpart B of FAA Order 7400.9.

Subpart L-Airport Radar Service Areas

§ 71.501 Designation.

Subpart C-Class C Airspace

Subpart C of FAA Order 7400.9.

Subpart M-Jet Routes and Area High Routes

§ 71.601 Applicability.
 § 71.603 Jet routes.
 § 71.605 Area routes above 18,000 feet MSL.
 § 71.607 Jet route descriptions.
 § 71.609 Area high route descriptions.

Subpart A-General; Class A Airspace

Not applicable.
 Subpart A of FAA Order 7400.9.
 Subpart A of FAA Order 7400.9.
 Subpart A of FAA Order 7400.9.
 Subpart A of FAA Order 7400.9.

Discussion of Comments

A total of 205 commenters submitted comments to Docket No. 24456 on NPRM No. 89-28. The FAA considered these comments in the adoption of this rule and changes to the proposals were made accordingly. Some comments did not specifically apply to any particular proposal addressed in NPRM No. 89-28. These comments related to the requirements for a transponder with Mode C capabilities, the FAA's anti-drug program, and the proposed TCA for the Washington-Baltimore metropolitan area.

Comments submitted on NPRM No. 89-28 reflect the views of a broad spectrum of the aviation public. The commenters included individuals as well as organizations representing commercial and general aviation pilots. Organizations that commented on NPRM No. 89-28 include: AOPA, ALPA, Air Traffic

Subpart E of FAA Order 7400.9.

Subpart G-Transition Areas

§ 71.181 Designation.

Subpart E-Class E Airspace

Subpart E of FAA Order 7400.9.

Subpart H-Positive Control Areas

§ 71.193 Designation.

Subpart A-General; Class A Airspace

§ 71.33 Class A airspace areas.

Subpart I-Reporting Points

§ 71.201 Designation.
 § 71.203 Domestic low altitude reporting points.
 § 71.207 Domestic high altitude reporting points.
 § 71.209 Other domestic reporting points.
 § 71.211 Alaskan low altitude reporting points.
 § 71.213 Alaskan high altitude reporting points.
 § 71.215 Hawaiian reporting points.

Subpart H-Reporting Points

§ 71.901 Applicability.
 Subpart H of FAA Order 7400.9.
 Subpart H of FAA Order 7400.9.
 Subpart H of FAA Order 7400.9.
 Subpart H of FAA Order 7400.9.
 Subpart H of FAA Order 7400.9.
 Subpart H of FAA Order 7400.9.

Subpart J-Area Low Routes

§ 71.301 Designation.

Subpart E-Class E Airspace

Subpart E of FAA Order 7400.9.

Subpart K-Terminal Control Areas

§ 71.401(a) Designation.
 § 71.401(b) Terminal control areas.

Subpart B-Class B Airspace

Subpart B of FAA Order 7400.9.
 Subpart B of FAA Order 7400.9.

Subpart L-Airport Radar Service Areas

§ 71.501 Designation.

Subpart C-Class C Airspace

Subpart C of FAA Order 7400.9.

Subpart M-Jet Routes and Area High Routes

§ 71.601 Applicability.
 § 71.603 Jet routes.
 § 71.605 Area routes above 18,000 feet MSL.
 § 71.607 Jet route descriptions.
 § 71.609 Area high route descriptions.

Subpart A-General; Class A Airspace

Not applicable.
 Subpart A of FAA Order 7400.9.
 Subpart A of FAA Order 7400.9.
 Subpart A of FAA Order 7400.9.
 Subpart A of FAA Order 7400.9.

Discussion of Comments

A total of 205 commenters submitted comments to Docket No. 24456 on NPRM No. 89-28. The FAA considered these comments in the adoption of this rule and changes to the proposals were made accordingly. Some comments did not specifically apply to any particular proposal addressed in NPRM No. 89-28. These comments related to the requirements for a transponder with Mode C capabilities, the FAA's anti-drug program, and the proposed TCA for the Washington-Baltimore metropolitan area.

Comments submitted on NPRM No. 89-28 reflect the views of a broad spectrum of the aviation public. The commenters included individuals as well as organizations representing commercial and general aviation pilots. Organizations that commented on NPRM No. 89-28 include: AOPA, ALPA, Air Traffic

only applies to operations in a terminal environment, the rule specifies that the airspace is “designated for an airport.”

AIRSPACE CLASSIFICATIONS

AIRSPACE FEATURES	CLASS A AIRSPACE	CLASS B AIRSPACE	CLASS C AIRSPACE	CLASS D AIRSPACE	CLASS E AIRSPACE	CLASS G AIRSPACE
Current Airspace Equivalent	Positive Control Areas	Terminal Control Areas	Airport Radar Service Areas	Airport Traffic Areas and Control Zones	General Controlled Airspace	Uncontrolled Airspace
Operations Permitted	IFR	IFR and VFR	IFR and VFR	IFR and VFR	IFR and VFR	IFR and VFR
Entry Prerequisites	ATC clearance	ATC clearance	ATC clearance for IFR Radio contact for all	ATC clearance for IFR Radio contact for all	ATC clearance for IFR Radio contact for all IFR	None
Minimum Pilot Qualifications	Instrument rating	Private or student certificate	Student certificate	Student certificate	Student certificate	Student certificate
Two-way radio communications	Yes			Yes	Yes for IFR operations	No
VFR Minimum Visibility	Not applicable	3 statute miles	3 statute miles	3 statute miles	*3 statute miles	**1 statute mile
VFR Minimum Distance from Clouds	Not applicable	Clear of clouds	500 feet below, 1,000 feet above, and 2,000 feet horizontal	500 feet below, 1,000 feet above, and 2,000 feet horizontal	*500 feet below, 1,000 feet above, and 2,000 feet horizontal	**500 feet below, 1,000 feet above, and 2,000 feet horizontal
Aircraft Separation	All	All	IFR, SVFR, and runway operations	IFR, SVFR and runway operations	IFR, SVFR	None
Conflict Resolution	Not applicable	Not applicable	Between IFR and VFR operations	No	No	No
Traffic Advisories	Not applicable	Not applicable	Yes	Workload permitting	Workload permitting	Workload permitting
Safety Advisories	Yes	Yes	Yes	Yes	Yes	Yes

*Different visibility minimum and distance from cloud requirements exist for operations above 10,000 feet MSL.

**Different visibility minima and distance from cloud requirements exist for night operations, operations above 10,000 feet MSL, and operations below 1,200 feet AGL.

Offshore Airspace

The FAA adopts, as proposed, the NAR recommendations NAR 3-2.1.1—Offshore Airspace Nomenclature, NAR 3-2.1.2—Offshore Control Area Uniform Base, NAR 3-2.1.3—Offshore Control Area Identification, and NAR 3-2.1.4—Offshore Airspace Classification, which consider offshore airspace areas. However, NAR 3-2.1.2, which recommends a uniform base for offshore control areas of 1,200 feet above the surface unless otherwise designated, and NAR 3-2.1.3, which recommends that offshore control areas be identified with a name as opposed to a number are contingent on the FAA’s further review. (More details on the review process appear later in this document under the title Implementation of Airspace Reclassification.) Any changes to offshore airspace areas resulting from the FAA’s review will be accomplished by separate rulemaking actions. The FAA’s review is being conducted in compliance with Executive Order 10854, which requires FAA consultation with both the Departments of State and Defense before designating controlled international airspace. The FAA expects that most offshore airspace areas will be classified as Class E or Class A airspace areas.

only applies to operations in a terminal environment, the rule specifies that the airspace is “designated for an airport.”

AIRSPACE CLASSIFICATIONS

AIRSPACE FEATURES	CLASS A AIRSPACE	CLASS B AIRSPACE	CLASS C AIRSPACE	CLASS D AIRSPACE	CLASS E AIRSPACE	CLASS G AIRSPACE
Current Airspace Equivalent	Positive Control Areas	Terminal Control Areas	Airport Radar Service Areas	Airport Traffic Areas and Control Zones	General Controlled Airspace	Uncontrolled Airspace
Operations Permitted	IFR	IFR and VFR	IFR and VFR	IFR and VFR	IFR and VFR	IFR and VFR
Entry Prerequisites	ATC clearance	ATC clearance	ATC clearance for IFR Radio contact for all	ATC clearance for IFR Radio contact for all	ATC clearance for IFR Radio contact for all IFR	None
Minimum Pilot Qualifications	Instrument rating	Private or student certificate	Student certificate	Student certificate	Student certificate	Student certificate
Two-way radio communications	Yes			Yes	Yes for IFR operations	No
VFR Minimum Visibility	Not applicable	3 statute miles	3 statute miles	3 statute miles	*3 statute miles	**1 statute mile
VFR Minimum Distance from Clouds	Not applicable	Clear of clouds	500 feet below, 1,000 feet above, and 2,000 feet horizontal	500 feet below, 1,000 feet above, and 2,000 feet horizontal	*500 feet below, 1,000 feet above, and 2,000 feet horizontal	**500 feet below, 1,000 feet above, and 2,000 feet horizontal
Aircraft Separation	All	All	IFR, SVFR, and runway operations	IFR, SVFR and runway operations	IFR, SVFR	None
Conflict Resolution	Not applicable	Not applicable	Between IFR and VFR operations	No	No	No
Traffic Advisories	Not applicable	Not applicable	Yes	Workload permitting	Workload permitting	Workload permitting
Safety Advisories	Yes	Yes	Yes	Yes	Yes	Yes

*Different visibility minimum and distance from cloud requirements exist for operations above 10,000 feet MSL.

**Different visibility minima and distance from cloud requirements exist for night operations, operations above 10,000 feet MSL, and operations below 1,200 feet AGL.

Offshore Airspace

The FAA adopts, as proposed, the NAR recommendations NAR 3-2.1.1—Offshore Airspace Nomenclature, NAR 3-2.1.2—Offshore Control Area Uniform Base, NAR 3-2.1.3—Offshore Control Area Identification, and NAR 3-2.1.4—Offshore Airspace Classification, which consider offshore airspace areas. However, NAR 3-2.1.2, which recommends a uniform base for offshore control areas of 1,200 feet above the surface unless otherwise designated, and NAR 3-2.1.3, which recommends that offshore control areas be identified with a name as opposed to a number are contingent on the FAA’s further review. (More details on the review process appear later in this document under the title Implementation of Airspace Reclassification.) Any changes to offshore airspace areas resulting from the FAA’s review will be accomplished by separate rulemaking actions. The FAA’s review is being conducted in compliance with Executive Order 10854, which requires FAA consultation with both the Departments of State and Defense before designating controlled international airspace. The FAA expects that most offshore airspace areas will be classified as Class E or Class A airspace areas.

the Class A designation for the PCAs, Class A airspace areas should remain en route airspace and should not be lower than 18,000 feet mean sea level (MSL).

As proposed, the FAA will reclassify the PCAs as Class A airspace areas. In addition, jet routes and area high routes will be reclassified as Class A airspace areas. These airspace areas, which consist of direct courses for navigating aircraft at altitudes between 18,000 feet MSL and flight level 450, inclusive, meet the criteria of Class A airspace as adopted by ICAO.

As noted earlier, the recommended ICAO airspace classes are not based on whether the airspace area is designated for “en route” or “terminal” operations. Any new Class A airspace areas would be proposed in separate rulemaking actions.

Class B Airspace

NPRM No. 89-28 proposed to reclassify TCAs as Class B airspace areas and to amend the minimum distances by which aircraft operating under VFR must remain from clouds. The current VFR minimum distance requirements of 500 feet below, 1,000 feet above, and 2,000 feet horizontal from clouds will be amended to require that the pilot must remain clear of clouds.

One comment supports and two comments specifically oppose the proposed reclassification. Twelve comments on the proposal to amend minimum distance from clouds for VFR operations in Class B airspace areas were received. Eight of these comments support and four oppose the proposal.

The comments submitted in support of the proposal to reclassify TCAs as Class B airspace areas and to modify the minimum distances from cloud for VFR operations include those from AOPA, the Alaska Airmen's Association, EAA, and SSA. AOPA stated that the proposal “is a positive step in improvement of VFR traffic flow within” Class B airspace areas.

A commenter in support of reclassification stated that some of the areas to be classified as Class B airspace areas could be redesignated as Class C airspace areas.

The four comments submitted in opposition to the proposed amendment on distance from cloud requirements for VFR operations include a comment from ALPA. Some commenters stated that the proposal to modify the minimum distance from clouds for VFR flight in Class B airspace areas reduces the existing margin of safety. ALPA further stated that the ability of a pilot to maintain visual contact with other aircraft is reduced if aircraft operate in close proximity to clouds. One commenter stated that the proposals do not answer the need for clear radio failure procedures in Class B airspace areas. Another commenter stated that Class B airspace areas are actually divided into two types of Class B airspace: one in which a private pilot certificate is required and one in which, at a minimum, only a student pilot certificate is required.

This rulemaking reclassifies existing airspace areas with the equivalent recommended ICAO airspace area. It does not redesignate existing airspace areas. For example, the redesignation of a Class B airspace area (TCA) to a Class C airspace area (ARSA) is beyond the scope of this rulemaking. The FAA believes that the elimination of terminal areas designated as Class B airspace areas would create a substantial adverse impact on the safe and efficient control of air traffic in those high volume terminal areas. Class B airspace areas, like the TCAs that preceded them, provide more efficient control in terminal areas where there is a large volume of air traffic and where a high percentage of that traffic is large turbine-powered aircraft. Additionally, on July 25, 1991, the FAA revised FAA Order 7110.65, *Air Traffic Control*, by adopting specific separation standards for operations under VFR in existing TCAs. These standards require air traffic controllers to separate aircraft operating under VFR in existing TCAs from other aircraft operating under VFR and IFR.

As stated in NPRM No. 89-28 in response to NAR 1-7.2.9—Recommended VFR Minima, the FAA views the relaxation of the distance from cloud requirements for VFR operations as a modification that would enhance rather than reduce safety. Under the existing regulations, a pilot operating an aircraft under VFR in a TCA (Class B airspace) is provided with ATC services and is subject to ATC clearances and instructions. For the pilot operating under VFR to remain specific distances from clouds, the pilot must alter course or assigned heading/route, which is a disruption to traffic flow and could be a compromise to safety. The amendment will increase safety for pilots operating under VFR and ATC by permitting these pilots to remain clear of clouds in Class B airspace areas, but not requiring them to remain a specific distance from clouds. However, if an ATC instruction to a pilot operating an aircraft under VFR could place that aircraft in a cloud, FAR § 91.3, Responsibility and authority of the pilot in command, requires the pilot in command to be responsible for ensuring that the aircraft does not enter a cloud and any such ATC instruction may be refused.

Accordingly, as proposed, the FAA will reclassify **TCAs** as Class B airspace areas and amend the distance from cloud requirements for **VFR** operations to clear of clouds.

Even though **ATC** communication requirements for operations in Class B airspace areas are the same as those that exist in **TCAs**, the relaxation of the distance from cloud requirements will become effective with the new airspace classifications. This will ensure that all users are familiar with the amendment when it becomes effective.

The amendment to reclassify **TCAs** as Class B airspace areas does not modify the current operating rules for communications. Lost communication requirements are addressed in paragraph 470, Two-way Radio Communications Failure, of the AIM and are not within the scope of the rulemaking.

The FAA accepted **NAR 1-7.3.3—Pilot Requirements for Operations in a TCA**, under the provisions of the existing requirements; hence, the reclassification of **TCAs** as Class B airspace areas meets existing regulations on minimum airman certificate levels. Section 61.95 of the FAR, which lists student pilot requirements for operations in a **TCA** (Class B airspace), is revised to meet the new airspace classification. Solo student pilot activity is, under both the existing regulations and this final rule, prohibited at certain airports.

Class C Airspace

Three comments were submitted on the reclassification of **ARSAs** as Class C airspace areas. None of the comments specifically support or oppose the reclassification. All of the comments, including one from **EAA**, addressed additional modifications.

Two commenters noted that the proposal for **VFR** operations in Class B airspace areas to remain clear of clouds could be applied to Class C airspace areas.

In its comment, **EAA** opposed any increase in the size of Class C airspace areas. Other recommendations by commenters included the need for clear radio failure procedures and the need for designated areas that do not require communications with **ATC** when the pilot desires to use an uncontrolled airport within Class C airspace areas.

As proposed, the FAA will reclassify **ARSAs** as Class C airspace areas. No other modifications to Class C airspace areas or changes in operating rules were proposed. An **ARSA** that currently operates on a part-time basis is classified as Class C part-time and Class D or Class E at other times.

Aircraft operating under **VFR** in Class C airspace areas operate under less stringent requirements than aircraft operating under **VFR** in Class B airspace areas and are not provided the same separation by **ATC**. Therefore, the relaxation of the **VFR** distance from cloud requirements in Class C airspace areas to remain clear of clouds would not be in accordance with safety precautions. As noted earlier, lost communication procedures are addressed in paragraph 470, Two-way Radio Communications Failure, of the AIM. Since Class C airspace areas often have a high number of aircraft that operate under **IFR**, a relaxation of existing communications requirements would not be in the interest of safety. Any modifications to the dimensions or operating requirements for Class C airspace areas are outside the scope of this rulemaking.

Class D Airspace

NPRM No. 89-28 proposed to reclassify control zones for airports with operating control towers and airport traffic areas, not associated with a **TCA** or an **ARSA**, as Class D airspace areas. In addition, **NPRM No. 89-28** proposed to: (1) raise the ceiling to up to, and including, 4,000 feet from the surface of the airport; (2) require aircraft in Class D airspace areas to establish two-way radio communications with **ATC**; and (3) convert the lateral unit of measurement from statute miles to nautical miles.

One hundred and forty comments concerning the proposal to establish the ceiling of the Class D airspace areas at 4,000 feet above the surface were submitted. All of the comments opposed the proposal.

Of the 83 comments regarding the proposal to require pilots who operate in Class D airspace areas to establish two-way radio communications with **ATC**, two supported the proposal and 80 opposed it. One comment neither supported nor opposed the proposals.

One hundred and forty-three comments related to the proposal to convert the lateral unit of measurement of Class D airspace areas from statute to nautical miles were submitted. Most interpreted the proposal to mean that the lateral size of the airspace areas would change from 5 statute miles to 5 nautical miles. (The FAA's intent in **NPRM No. 89-28** is to convert statute miles as a unit of measurement to the equivalent in nautical miles.) Twelve comments supported and 131 comments opposed the proposal.

Accordingly, as proposed, the FAA will reclassify **TCAs** as Class B airspace areas and amend the distance from cloud requirements for **VFR** operations to clear of clouds.

Even though **ATC** communication requirements for operations in Class B airspace areas are the same as those that exist in **TCAs**, the relaxation of the distance from cloud requirements will become effective with the new airspace classifications. This will ensure that all users are familiar with the amendment when it becomes effective.

The amendment to reclassify **TCAs** as Class B airspace areas does not modify the current operating rules for communications. Lost communication requirements are addressed in paragraph 470, Two-way Radio Communications Failure, of the AIM and are not within the scope of the rulemaking.

The FAA accepted **NAR 1-7.3.3—Pilot Requirements for Operations in a TCA**, under the provisions of the existing requirements; hence, the reclassification of **TCAs** as Class B airspace areas meets existing regulations on minimum airman certificate levels. Section 61.95 of the FAR, which lists student pilot requirements for operations in a **TCA** (Class B airspace), is revised to meet the new airspace classification. Solo student pilot activity is, under both the existing regulations and this final rule, prohibited at certain airports.

Class C Airspace

Three comments were submitted on the reclassification of **ARSAs** as Class C airspace areas. None of the comments specifically support or oppose the reclassification. All of the comments, including one from **EAA**, addressed additional modifications.

Two commenters noted that the proposal for **VFR** operations in Class B airspace areas to remain clear of clouds could be applied to Class C airspace areas.

In its comment, **EAA** opposed any increase in the size of Class C airspace areas. Other recommendations by commenters included the need for clear radio failure procedures and the need for designated areas that do not require communications with **ATC** when the pilot desires to use an uncontrolled airport within Class C airspace areas.

As proposed, the FAA will reclassify **ARSAs** as Class C airspace areas. No other modifications to Class C airspace areas or changes in operating rules were proposed. An **ARSA** that currently operates on a part-time basis is classified as Class C part-time and Class D or Class E at other times.

Aircraft operating under **VFR** in Class C airspace areas operate under less stringent requirements than aircraft operating under **VFR** in Class B airspace areas and are not provided the same separation by **ATC**. Therefore, the relaxation of the **VFR** distance from cloud requirements in Class C airspace areas to remain clear of clouds would not be in accordance with safety precautions. As noted earlier, lost communication procedures are addressed in paragraph 470, Two-way Radio Communications Failure, of the AIM. Since Class C airspace areas often have a high number of aircraft that operate under **IFR**, a relaxation of existing communications requirements would not be in the interest of safety. Any modifications to the dimensions or operating requirements for Class C airspace areas are outside the scope of this rulemaking.

Class D Airspace

NPRM No. 89-28 proposed to reclassify control zones for airports with operating control towers and airport traffic areas, not associated with a **TCA** or an **ARSA**, as Class D airspace areas. In addition, **NPRM No. 89-28** proposed to: (1) raise the ceiling to up to, and including, 4,000 feet from the surface of the airport; (2) require aircraft in Class D airspace areas to establish two-way radio communications with **ATC**; and (3) convert the lateral unit of measurement from statute miles to nautical miles.

One hundred and forty comments concerning the proposal to establish the ceiling of the Class D airspace areas at 4,000 feet above the surface were submitted. All of the comments opposed the proposal.

Of the 83 comments regarding the proposal to require pilots who operate in Class D airspace areas to establish two-way radio communications with **ATC**, two supported the proposal and 80 opposed it. One comment neither supported nor opposed the proposals.

One hundred and forty-three comments related to the proposal to convert the lateral unit of measurement of Class D airspace areas from statute to nautical miles were submitted. Most interpreted the proposal to mean that the lateral size of the airspace areas would change from 5 statute miles to 5 nautical miles. (The FAA's intent in **NPRM No. 89-28** is to convert statute miles as a unit of measurement to the equivalent in nautical miles.) Twelve comments supported and 131 comments opposed the proposal.

Accordingly, as proposed, the FAA will reclassify **TCAs** as Class B airspace areas and amend the distance from cloud requirements for **VFR** operations to clear of clouds.

Even though **ATC** communication requirements for operations in Class B airspace areas are the same as those that exist in **TCAs**, the relaxation of the distance from cloud requirements will become effective with the new airspace classifications. This will ensure that all users are familiar with the amendment when it becomes effective.

The amendment to reclassify **TCAs** as Class B airspace areas does not modify the current operating rules for communications. Lost communication requirements are addressed in paragraph 470, Two-way Radio Communications Failure, of the AIM and are not within the scope of the rulemaking.

The FAA accepted **NAR 1-7.3.3—Pilot Requirements for Operations in a TCA**, under the provisions of the existing requirements; hence, the reclassification of **TCAs** as Class B airspace areas meets existing regulations on minimum airman certificate levels. Section 61.95 of the FAR, which lists student pilot requirements for operations in a **TCA** (Class B airspace), is revised to meet the new airspace classification. Solo student pilot activity is, under both the existing regulations and this final rule, prohibited at certain airports.

Class C Airspace

Three comments were submitted on the reclassification of **ARSAs** as Class C airspace areas. None of the comments specifically support or oppose the reclassification. All of the comments, including one from **EAA**, addressed additional modifications.

Two commenters noted that the proposal for **VFR** operations in Class B airspace areas to remain clear of clouds could be applied to Class C airspace areas.

In its comment, **EAA** opposed any increase in the size of Class C airspace areas. Other recommendations by commenters included the need for clear radio failure procedures and the need for designated areas that do not require communications with **ATC** when the pilot desires to use an uncontrolled airport within Class C airspace areas.

As proposed, the FAA will reclassify **ARSAs** as Class C airspace areas. No other modifications to Class C airspace areas or changes in operating rules were proposed. An **ARSA** that currently operates on a part-time basis is classified as Class C part-time and Class D or Class E at other times.

Aircraft operating under **VFR** in Class C airspace areas operate under less stringent requirements than aircraft operating under **VFR** in Class B airspace areas and are not provided the same separation by **ATC**. Therefore, the relaxation of the **VFR** distance from cloud requirements in Class C airspace areas to remain clear of clouds would not be in accordance with safety precautions. As noted earlier, lost communication procedures are addressed in paragraph 470, Two-way Radio Communications Failure, of the AIM. Since Class C airspace areas often have a high number of aircraft that operate under **IFR**, a relaxation of existing communications requirements would not be in the interest of safety. Any modifications to the dimensions or operating requirements for Class C airspace areas are outside the scope of this rulemaking.

Class D Airspace

NPRM No. 89-28 proposed to reclassify control zones for airports with operating control towers and airport traffic areas, not associated with a **TCA** or an **ARSA**, as Class D airspace areas. In addition, **NPRM No. 89-28** proposed to: (1) raise the ceiling to up to, and including, 4,000 feet from the surface of the airport; (2) require aircraft in Class D airspace areas to establish two-way radio communications with **ATC**; and (3) convert the lateral unit of measurement from statute miles to nautical miles.

One hundred and forty comments concerning the proposal to establish the ceiling of the Class D airspace areas at 4,000 feet above the surface were submitted. All of the comments opposed the proposal.

Of the 83 comments regarding the proposal to require pilots who operate in Class D airspace areas to establish two-way radio communications with **ATC**, two supported the proposal and 80 opposed it. One comment neither supported nor opposed the proposals.

One hundred and forty-three comments related to the proposal to convert the lateral unit of measurement of Class D airspace areas from statute to nautical miles were submitted. Most interpreted the proposal to mean that the lateral size of the airspace areas would change from 5 statute miles to 5 nautical miles. (The FAA's intent in **NPRM No. 89-28** is to convert statute miles as a unit of measurement to the equivalent in nautical miles.) Twelve comments supported and 131 comments opposed the proposal.

Figure 1. Examples of Satellite Airports Excluded from Class D Airspace Areas.

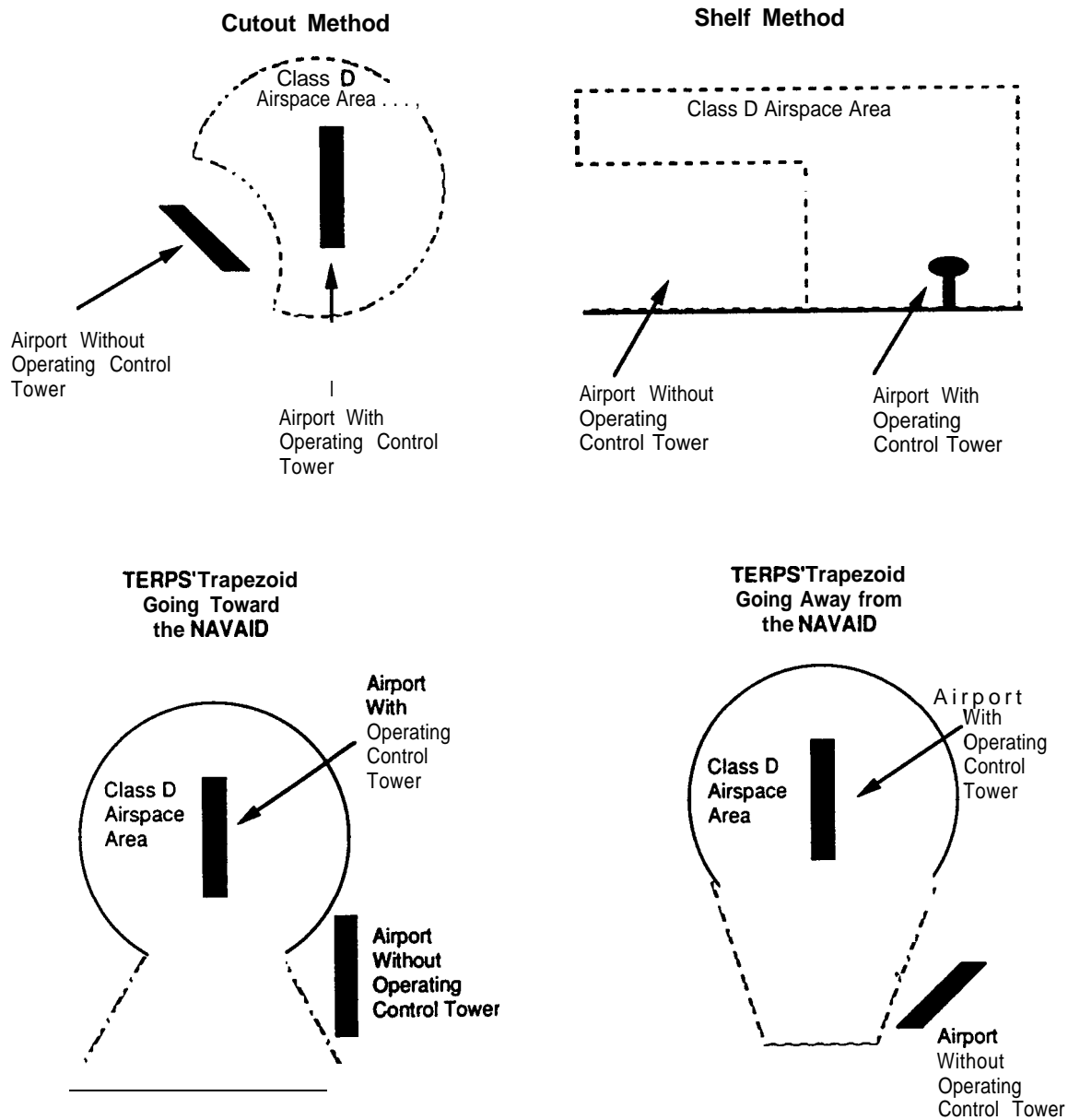
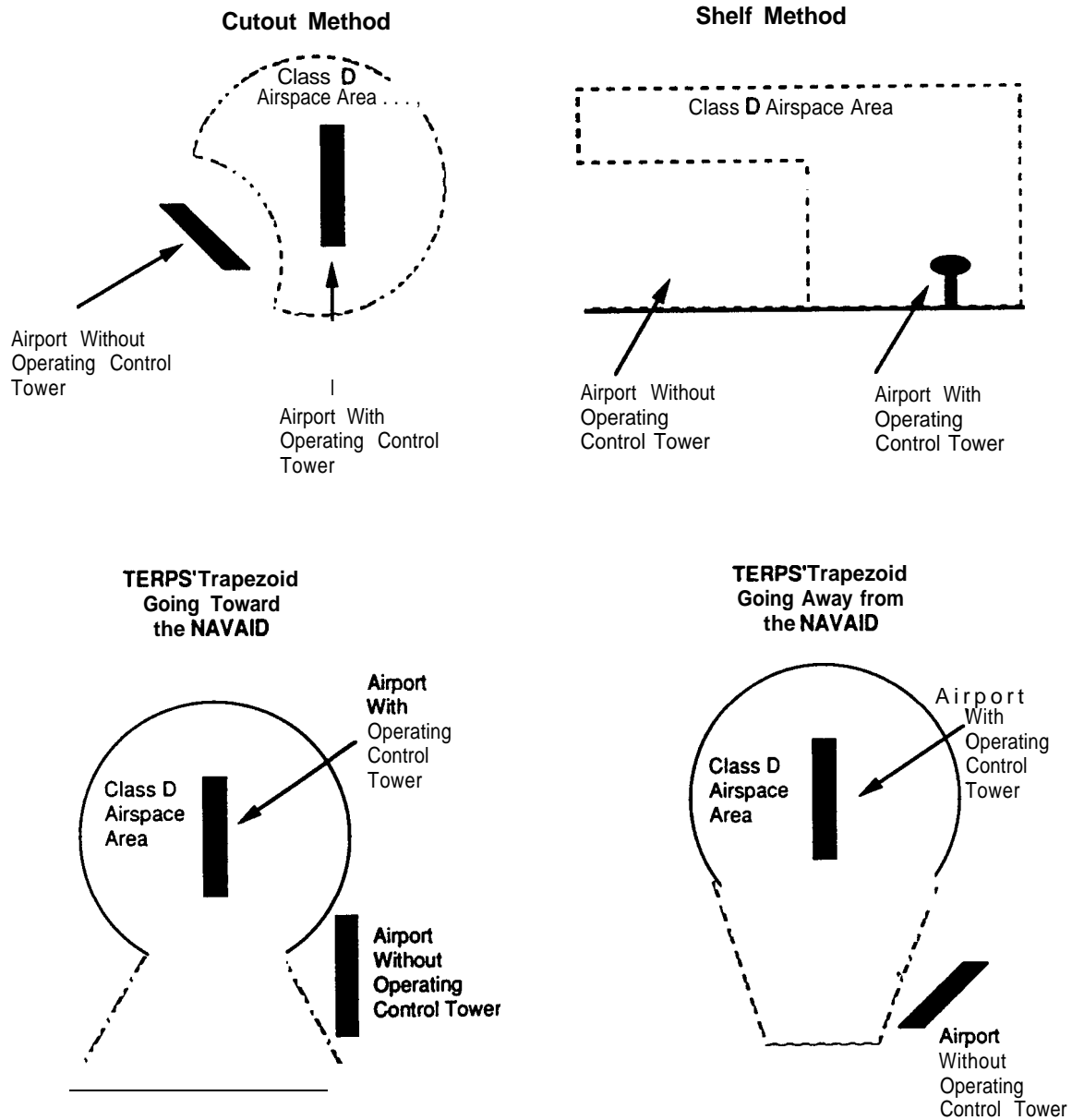


Figure 1. Examples of Satellite Airports Excluded from Class D Airspace Areas.



Additional Comments

Comments on issues affecting a specific class of airspace were also received. These comments with any modifications to the final rule are discussed below.

Some commenters, including AOPA, expressed apprehension that the FAA may reclassify airspace in an arbitrary manner. Other commenters, including EAA and SSA, believed the FAA implied in NPRM No. 89-28 that the person who is delegated airspace authority could allow any airspace designations considered appropriate.

In NPRM No. 89-28 and in this final rule, the FAA does not suggest that any new airspace designations could be specified without following rulemaking procedures where required. Further review of airspace areas will be proposed in future FAA rulemaking actions.

Three commenters, including the Alaska Airmen's Association and SSA, noted that NPRM No. 89-28 proposed to define controlled airspace in FAR § 1.1 as airspace in which "all aircraft may be subject to ATC" rather than airspace in which "some or all aircraft may be subject to ATC." According to one commenter, because aircraft operating under VFR are not always subject to ATC in controlled airspace, especially Class E airspace, the current definition is more accurate.

The proposed definition of controlled airspace is adopted in essence but it has been modified to correspond with ICAO's definition of a controlled airspace. Subsequent to the publication of NPRM No. 89-28, ICAO modified its definition of controlled airspace to read as follows: "*Controlled airspace*. An airspace of defined dimensions within which air traffic control service is provided to IFR flights and to VFR flights in accordance with the airspace classification. Note-Controlled airspace is a generic term which covers ATS [air traffic services] in airspace Classes A, B, C, D, and E." The proposed FAA definition in NPRM No. 89-28 read: "*Controlled airspace* means airspace designated as Class A, Class B, Class C, Class D, or Class E airspace in Part 71 of this chapter and within which all aircraft may be subject to air traffic control."

While the commenter is essentially correct that all aircraft are not always subject to air traffic control, any aircraft may be subject to ATC if the pilot operates under IFR or if the pilot requests and receives air traffic services. The FAA believes that misunderstandings would be minimized with the adoption of the ICAO definition. The ICAO definition and the proposed definition are essentially synonymous; however, the FAA is confident the adoption of the ICAO definition is consistent with the objectives of airspace reclassification and that it is beneficial to have a common international definition of controlled airspace.

Four commenters, including EAA and SSA, noted that NPRM No. 89-28 only permits Special VFR operations for the purposes of departing from or arriving at an airport. The commenters stated that such a restriction of Special VFR operations would affect pipeline patrol, aerial photography, law enforcement, agricultural, and other special types of operations. EAA also stated that the proposed limitation of 4,000 feet above the surface for Special VFR operations could prevent pilots from climbing to the top of a haze layer.

The FAA will continue to permit Special VFR operations for through flights as well as flights for arrival or departure. Because control zones will be eliminated under Airspace Reclassification, Special VFR operations are only permitted within the ceiling and lateral boundaries of the surface areas of the Class B, Class C, Class D, or Class E airspace designated for an airport. Because the proposal for a uniform ceiling for Class C, Class D, and Class E airspace areas at 4,000 feet above the surface is not adopted, the boundaries of the airspace area in which Special VFR operations are permitted will vary. For example, if a Class C airspace area has a ceiling designated at 4,500 feet MSL and a surface area designated within a 5-nautical mile radius from the airport, Special VFR operations are permitted within that 5-nautical mile radius up to and including 4,500 feet MSL.

One commenter, a flight instructor with a petition signed by additional flight instructors, stated that the language in the proposal on aerobatic flight is vague and could be interpreted to restrict aerobatic operations within existing transition areas and other less crowded airspace areas. The commenter was concerned that the proposed § 91.71(c) could affect spin training at flight schools.

Under this amendment, the term "control zone" will be eliminated. However, the FAA desires to continue restrictions that currently exist in the FAR on operations within control zones. These restrictions will now apply within the lateral boundaries of the surface areas of the Class B, Class C, Class D, or Class E airspace designated for an airport. For example, if a Class E airspace area is designated to extend upward from the surface with a 4.4-nautical mile radius from the airport and a ceiling of 2,600 feet MSL, aerobatic flight will not be permitted below 2,600 feet MSL within a 4.4-nautical mile radius of the airport.

Additional Comments

Comments on issues affecting a specific class of airspace were also received. These comments with any modifications to the final rule are discussed below.

Some commenters, including AOPA, expressed apprehension that the FAA may reclassify airspace in an arbitrary manner. Other commenters, including EAA and SSA, believed the FAA implied in NPRM No. 89-28 that the person who is delegated airspace authority could allow any airspace designations considered appropriate.

In NPRM No. 89-28 and in this final rule, the FAA does not suggest that any new airspace designations could be specified without following rulemaking procedures where required. Further review of airspace areas will be proposed in future FAA rulemaking actions.

Three commenters, including the Alaska Airmen's Association and SSA, noted that NPRM No. 89-28 proposed to define controlled airspace in FAR § 1.1 as airspace in which "all aircraft may be subject to ATC" rather than airspace in which "some or all aircraft may be subject to ATC." According to one commenter, because aircraft operating under VFR are not always subject to ATC in controlled airspace, especially Class E airspace, the current definition is more accurate.

The proposed definition of controlled airspace is adopted in essence but it has been modified to correspond with ICAO's definition of a controlled airspace. Subsequent to the publication of NPRM No. 89-28, ICAO modified its definition of controlled airspace to read as follows: "*Controlled airspace*. An airspace of defined dimensions within which air traffic control service is provided to IFR flights and to VFR flights in accordance with the airspace classification. Note-Controlled airspace is a generic term which covers ATS [air traffic services] in airspace Classes A, B, C, D, and E." The proposed FAA definition in NPRM No. 89-28 read: "*Controlled airspace* means airspace designated as Class A, Class B, Class C, Class D, or Class E airspace in Part 71 of this chapter and within which all aircraft may be subject to air traffic control."

While the commenter is essentially correct that all aircraft are not always subject to air traffic control, any aircraft may be subject to ATC if the pilot operates under IFR or if the pilot requests and receives air traffic services. The FAA believes that misunderstandings would be minimized with the adoption of the ICAO definition. The ICAO definition and the proposed definition are essentially synonymous; however, the FAA is confident the adoption of the ICAO definition is consistent with the objectives of airspace reclassification and that it is beneficial to have a common international definition of controlled airspace.

Four commenters, including EAA and SSA, noted that NPRM No. 89-28 only permits Special VFR operations for the purposes of departing from or arriving at an airport. The commenters stated that such a restriction of Special VFR operations would affect pipeline patrol, aerial photography, law enforcement, agricultural, and other special types of operations. EAA also stated that the proposed limitation of 4,000 feet above the surface for Special VFR operations could prevent pilots from climbing to the top of a haze layer.

The FAA will continue to permit Special VFR operations for through flights as well as flights for arrival or departure. Because control zones will be eliminated under Airspace Reclassification, Special VFR operations are only permitted within the ceiling and lateral boundaries of the surface areas of the Class B, Class C, Class D, or Class E airspace designated for an airport. Because the proposal for a uniform ceiling for Class C, Class D, and Class E airspace areas at 4,000 feet above the surface is not adopted, the boundaries of the airspace area in which Special VFR operations are permitted will vary. For example, if a Class C airspace area has a ceiling designated at 4,500 feet MSL and a surface area designated within a 5-nautical mile radius from the airport, Special VFR operations are permitted within that 5-nautical mile radius up to and including 4,500 feet MSL.

One commenter, a flight instructor with a petition signed by additional flight instructors, stated that the language in the proposal on aerobatic flight is vague and could be interpreted to restrict aerobatic operations within existing transition areas and other less crowded airspace areas. The commenter was concerned that the proposed § 91.71(c) could affect spin training at flight schools.

Under this amendment, the term "control zone" will be eliminated. However, the FAA desires to continue restrictions that currently exist in the FAR on operations within control zones. These restrictions will now apply within the lateral boundaries of the surface areas of the Class B, Class C, Class D, or Class E airspace designated for an airport. For example, if a Class E airspace area is designated to extend upward from the surface with a 4.4-nautical mile radius from the airport and a ceiling of 2,600 feet MSL, aerobatic flight will not be permitted below 2,600 feet MSL within a 4.4-nautical mile radius of the airport.

§ 61.193(b)(4): Both references to a “terminal control area” are replaced with “Class B airspace area.”

§ 61.195(d)(3): Both references to a “terminal control area” are replaced with “Class B airspace area.”

Part 75: This part is removed and reserved with all sections being transferred to a new Subpart M in existing Part 71.

§ 91.126: This section is established to include the existing requirements in § 91.127 on operations on or in the vicinity of an airport without an operating control tower.

§ 91.905: The references to §§ 91.127, 91.129, 91.130, 91.131, and 91.135 are replaced with the titles to become effective September 16, 1993, and a reference is added to § 91.126.

§ 93.1(b): The reference to § 93.113, which is to be deleted as of September 16, 1993, is deleted.

Subpart N, Part 93: This subpart on the airport traffic area at the **Sabre** U.S. Army Heliport (Tennessee) is removed and reserved. On September 16, 1993, this airspace will become a Class D airspace area.

Subpart O, Part 93: This subpart on the Navy airport traffic area at Jacksonville, Florida, is removed and reserved. On September 16, 1993, this airspace will become three separate but adjoining Class D airspace areas.

Subpart R, Part 93: This subpart on the Special Air Traffic Rules at El **Toro**, California, is removed and reserved. On September 16, 1993, this airspace will become a part of the El **Toro** Class C airspace area.

§ 135.205(b): The reference to “uncontrolled airspace” is replaced with “Class G airspace.” The reference to “control zones” is replaced with “within the lateral boundaries of the surface areas of Class B, Class C, Class D, or Class E airspace designated for an airport.”

§ 139.323(a): The reference to “terminal control area” is replaced with “Class B airspace area.”

§ 171.9(e)(1) and (e)(2): All references to “air traffic control areas” are replaced with “controlled airspace.”

§ 171.29(d)(1) and (d)(2): All references to “air traffic control areas” are replaced with “controlled airspace.”

§ 171.159(e)(1) and (e)(2): Both references to “air traffic control areas” are replaced with “controlled airspace.” The reference to “air traffic control zones or areas” is replaced with “controlled airspace.”

§ 171.209(d): Both references to “air traffic control areas” are replaced with “controlled airspace.” The reference to “air traffic control zones or areas” is replaced with “controlled airspace.”

§ 171.323(i): The reference to “air traffic control areas” is replaced with “controlled airspace.” The reference to “air traffic control zones or areas” is replaced with “controlled airspace.”

Obsolete Dates

Obsolete dates have been removed from §§ 91.215(b)(2), (b)(4), and (b)(5)(ii). Section 91.215(b)(5)(i)(A) is obsolete and is deleted. Section 91.215(b)(5)(i)(B) is incorporated into existing § 91.215(b)(5)(i).

Regulatory Evaluation Summary

This section summarizes the full regulatory evaluation prepared by the FAA that provides more detailed estimates of the economic consequences of this final rule regulatory action. This summary and the full evaluation quantify, to the extent practicable, estimated costs to the private sector, consumers, Federal, State and local governments, as well as anticipated benefits.

Executive Order 12291, dated February 17, 1981, directs Federal agencies to promulgate new regulations or modify existing regulations only if potential benefits to society for each regulatory change outweigh potential costs. The order also requires the preparation of a Regulatory Impact Analysis of all major rules except those responding to emergency situations or other narrowly defined exigencies. A major rule is one that is likely to result in an annual effect on the economy of \$100 million or more, a major increase in consumer costs, a significant adverse effect on competition, or one that is highly controversial.

The FAA has determined that this rule is not major as defined in the executive order. Therefore, a full regulatory analysis, that includes the identification and evaluation of cost reducing alternatives

to the final rule, has not been prepared. Instead, the agency has prepared a more concise document termed a regulatory *evaluation* that analyzes only this rule without identifying alternatives. In addition to a summary of the regulatory evaluation, this section also contains a final regulatory flexibility determination required by the 1980 Regulatory Flexibility Act (P.L. 96-354) and an International Trade Impact Assessment. If the reader desires more detailed economic information than this summary contains, then he/she should consult the full regulatory evaluation contained in the docket.

Benefit-Cost Analysis

The regulatory evaluation examines the costs and benefits of this final rule to reclassify U.S. airspace. This rule is intended to simplify airspace designations, achieve international commonality of airspace designations, standardize equipment requirements and associate appropriate pilot certification requirements as well as certain other requirements associated with each proposed airspace designation. These changes are based primarily on recommendations from a National Airspace Review (NAR) task group and will ultimately allow for increased safety and efficiency in the U.S. airspace and air traffic control system.

costs

The FAA estimates the total incremental cost that will accrue from the implementation of this final rule to be \$1.9 million (discounted, in 1990 dollars). Virtually all cost, which is expected to be incurred by the FAA, will accrue from revisions to aeronautical charts, re-education of the pilot community, and revision of air traffic controller training courses. Each one of these factors is briefly discussed below:

1. Revisions to Aeronautical Charts

A significant cost impact associated with this rule will result from the requirement to change aeronautical charts. These modifications will be incorporated during the regular updating and printing of the charts. Therefore, all costs associated with printing aeronautical charts are assumed to be normal costs of doing business. However, because of dimension and symbol changes that will be needed, the plates used to print the charts will need to be changed, and this will affect most of the aeronautical charts printed.

The total cost of revisions to all charts is estimated by the National Ocean Service based on the summation of the costs of revising each class of the airspace. The total discounted cost is estimated to be \$1.2 million.

2. Revision of Air Traffic Training Courses

Manuals, textbooks, and other training materials used to educate FAA controllers will need to be updated to reflect the airspace reclassification. According to the FAA Aeronautical Center in Oklahoma City, lesson plans, visual aids, handouts, laboratory exercises, and tests will need to be revised.

The cost of these revisions is determined by multiplying the total revision time by the hourly cost of the course manager making the changes. The course managers are level GS-14 (step 5) employees with an average loaded annual salary of \$72,000. Assuming 2,080 hours per year, their average loaded hourly salary is \$35. The cost of the course changes is estimated to be \$43,000 (discounted). An additional cost of \$10,000 (discounted) will accrue as the result of a one-week seminar and associated travel. This seminar will be necessary to educate course managers about the airspace reclassification. The total cost that will accrue from this factor is estimated to be \$43,000 (discounted).

3. Re-education of the Pilot Community

Pilots who are presently certificated to operate in the U.S. airspace will need to become familiar with the airspace reclassification as the result of this rule. This task will be accomplished through a variety of publications, videotapes, and pilot meetings.

The FAA is considering the production of a videotape that will be provided as a public service to industry associations, such as AOPA, ALPA, and NBAA, to inform them of the airspace reclassification. This videotape could be shown at various association meetings to help re-educate the pilot community. The FAA's Office of Public Affairs estimates that the film will be 20 to 25 minutes long and could be produced at a cost of \$75,000 (discounted).

The FAA is also considering the publication of an advisory circular (AC) which will document the new airspace classifications. The AC will be mailed to each registered pilot. It is estimated that one man-week at a level GS-14 (Step 5) will be required to draft the AC and obtain approval in the sponsoring organization, and one GS-14 man-week will be required to obtain FAA approval of the AC. The cost associated with 2 man-weeks at a level GS-14 needed to prepare the AC is estimated

to the final rule, has not been prepared. Instead, the agency has prepared a more concise document termed a regulatory *evaluation* that analyzes only this rule without identifying alternatives. In addition to a summary of the regulatory evaluation, this section also contains a final regulatory flexibility determination required by the 1980 Regulatory Flexibility Act (P.L. 96-354) and an International Trade Impact Assessment. If the reader desires more detailed economic information than this summary contains, then he/she should consult the full regulatory evaluation contained in the docket.

Benefit-Cost Analysis

The regulatory evaluation examines the costs and benefits of this final rule to reclassify U.S. airspace. This rule is intended to simplify airspace designations, achieve international commonality of airspace designations, standardize equipment requirements and associate appropriate pilot certification requirements as well as certain other requirements associated with each proposed airspace designation. These changes are based primarily on recommendations from a National Airspace Review (NAR) task group and will ultimately allow for increased safety and efficiency in the U.S. airspace and air traffic control system.

costs

The FAA estimates the total incremental cost that will accrue from the implementation of this final rule to be \$1.9 million (discounted, in 1990 dollars). Virtually all cost, which is expected to be incurred by the FAA, will accrue from revisions to aeronautical charts, re-education of the pilot community, and revision of air traffic controller training courses. Each one of these factors is briefly discussed below:

1. Revisions to Aeronautical Charts

A significant cost impact associated with this rule will result from the requirement to change aeronautical charts. These modifications will be incorporated during the regular updating and printing of the charts. Therefore, all costs associated with printing aeronautical charts are assumed to be normal costs of doing business. However, because of dimension and symbol changes that will be needed, the plates used to print the charts will need to be changed, and this will affect most of the aeronautical charts printed.

The total cost of revisions to all charts is estimated by the National Ocean Service based on the summation of the costs of revising each class of the airspace. The total discounted cost is estimated to be \$1.2 million.

2. Revision of Air Traffic Training Courses

Manuals, textbooks, and other training materials used to educate FAA controllers will need to be updated to reflect the airspace reclassification. According to the FAA Aeronautical Center in Oklahoma City, lesson plans, visual aids, handouts, laboratory exercises, and tests will need to be revised.

The cost of these revisions is determined by multiplying the total revision time by the hourly cost of the course manager making the changes. The course managers are level GS-14 (step 5) employees with an average loaded annual salary of \$72,000. Assuming 2,080 hours per year, their average loaded hourly salary is \$35. The cost of the course changes is estimated to be \$43,000 (discounted). An additional cost of \$10,000 (discounted) will accrue as the result of a one-week seminar and associated travel. This seminar will be necessary to educate course managers about the airspace reclassification. The total cost that will accrue from this factor is estimated to be \$43,000 (discounted).

3. Re-education of the Pilot Community

Pilots who are presently certificated to operate in the U.S. airspace will need to become familiar with the airspace reclassification as the result of this rule. This task will be accomplished through a variety of publications, videotapes, and pilot meetings.

The FAA is considering the production of a videotape that will be provided as a public service to industry associations, such as AOPA, ALPA, and NBAA, to inform them of the airspace reclassification. This videotape could be shown at various association meetings to help re-educate the pilot community. The FAA's Office of Public Affairs estimates that the film will be 20 to 25 minutes long and could be produced at a cost of \$75,000 (discounted).

The FAA is also considering the publication of an advisory circular (AC) which will document the new airspace classifications. The AC will be mailed to each registered pilot. It is estimated that one man-week at a level GS-14 (Step 5) will be required to draft the AC and obtain approval in the sponsoring organization, and one GS-14 man-week will be required to obtain FAA approval of the AC. The cost associated with 2 man-weeks at a level GS-14 needed to prepare the AC is estimated

to review rules which may have “a significant cost impact on a substantial number of small entities.” The small entities which could be potentially affected by the **implementation** of this notice are pilot schools.

Training materials used in the courses offered by the pilot schools will have to be modified to reflect the changes of the airspace reclassification. However, pilot schools will not incur any cost impact since the documents they use will be updated as a normal course of business. Thus, there will be no cost impact to those pilot schools classified as small entities. Therefore, this rule will not have a significant cost impact on a substantial number of small entities.

FEDERALISM IMPLICATIONS

The amendments in this final rule will not have substantial direct effect on the States, on the relationship between the National Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that these amendments will not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

PAPERWORK REDUCTION ACT

In accordance with the Paperwork Reduction Act of 1980 (Pub L. 96-511), there are no requirements for information collection associated with this rule.

CONCLUSION

For reasons discussed in the preamble, and based on the findings in the Regulatory Evaluation Determination and the International Trade Impact Analysis, the FAA has determined that these amendments do not qualify as a major rule under Executive Order 12291. In addition, the FAA certifies that these amendments will not have a significant economic effect on a substantial number of small business entities under the criteria of the Regulatory Flexibility Act. These amendments are considered significant under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979). A regulatory evaluation of these amendments, including a Regulatory Flexibility Determination and Trade Impact Analysis, has been placed in its entirety in the regulatory docket. A copy may be obtained by contacting the person identified under “*FOR FURTHER INFORMATION CONTACT.*”

CROSS REFERENCE

To identify where existing regulations for Part 75 are relocated in existing Part 71, the following cross reference lists are provided:

CROSS REFERENCE TABLE

Old Section	New Section
75.1	71.601
75.11	71.603
75.13	71.605
75.17	Deleted
75.100	71.607
75.400	71.609
New Section	Old Section
71.601	75.1
71.603	75.11
71.605	75.13
71.607	75.100
71.609	75.400

To identify where existing regulations for Part 71 are relocated in the rule to be effective September 16, 1993, or if the regulations will be relocated in FAA Order 7400.9, the following cross reference lists are provided:

to review rules which may have “a significant cost impact on a substantial number of small entities.” The small entities which could be potentially affected by the implementation of this notice are pilot schools.

Training materials used in the courses offered by the pilot schools will have to be modified to reflect the changes of the airspace reclassification. However, pilot schools will not incur any cost impact since the documents they use will be updated as a normal course of business. Thus, there will be no cost impact to those pilot schools classified as small entities. Therefore, this rule will not have a significant cost impact on a substantial number of small entities.

FEDERALISM IMPLICATIONS

The amendments in this final rule will not have substantial direct effect on the States, on the relationship between the National Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that these amendments will not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

PAPERWORK REDUCTION ACT

In accordance with the Paperwork Reduction Act of 1980 (Pub L. 96-511), there are no requirements for information collection associated with this rule.

CONCLUSION

For reasons discussed in the preamble, and based on the findings in the Regulatory Evaluation Determination and the International Trade Impact Analysis, the FAA has determined that these amendments do not qualify as a major rule under Executive Order 12291. In addition, the FAA certifies that these amendments will not have a significant economic effect on a substantial number of small business entities under the criteria of the Regulatory Flexibility Act. These amendments are considered significant under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979). A regulatory evaluation of these amendments, including a Regulatory Flexibility Determination and Trade Impact Analysis, has been placed in its entirety in the regulatory docket. A copy may be obtained by contacting the person identified under “*FOR FURTHER INFORMATION CONTACT.*”

CROSS REFERENCE

To identify where existing regulations for Part 75 are relocated in existing Part 71, the following cross reference lists are provided:

CROSS REFERENCE TABLE

Old Section	New Section
75.1	71.601
75.11	71.603
75.13	71.605
75.17	Deleted
75.100	71.607
75.400	71.609
New Section	Old Section
71.601	75.1
71.603	75.11
71.605	75.13
71.607	75.100
71.609	75.400

To identify where existing regulations for Part 71 are relocated in the rule to be effective September 16, 1993, or if the regulations will be relocated in FAA Order 7400.9, the following cross reference lists are provided:

to review rules which may have “a significant cost impact on a substantial number of small entities.” The small entities which could be potentially affected by the implementation of this notice are pilot schools.

Training materials used in the courses offered by the pilot schools will have to be modified to reflect the changes of the airspace reclassification. However, pilot schools will not incur any cost impact since the documents they use will be updated as a normal course of business. Thus, there will be no cost impact to those pilot schools classified as small entities. Therefore, this rule will not have a significant cost impact on a substantial number of small entities.

FEDERALISM IMPLICATIONS

The amendments in this final rule will not have substantial direct effect on the States, on the relationship between the National Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that these amendments will not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

PAPERWORK REDUCTION ACT

In accordance with the Paperwork Reduction Act of 1980 (Pub L. 96-511), there are no requirements for information collection associated with this rule.

CONCLUSION

For reasons discussed in the preamble, and based on the findings in the Regulatory Evaluation Determination and the International Trade Impact Analysis, the FAA has determined that these amendments do not qualify as a major rule under Executive Order 12291. In addition, the FAA certifies that these amendments will not have a significant economic effect on a substantial number of small business entities under the criteria of the Regulatory Flexibility Act. These amendments are considered significant under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979). A regulatory evaluation of these amendments, including a Regulatory Flexibility Determination and Trade Impact Analysis, has been placed in its entirety in the regulatory docket. A copy may be obtained by contacting the person identified under “*FOR FURTHER INFORMATION CONTACT.*”

CROSS REFERENCE

To identify where existing regulations for Part 75 are relocated in existing Part 71, the following cross reference lists are provided:

CROSS REFERENCE TABLE

Old Section	New Section
75.1	71.601
75.11	71.603
75.13	71.605
75.17	Deleted
75.100	71.607
75.400	71.609
New Section	Old Section
71.601	75.1
71.603	75.11
71.605	75.13
71.607	75.100
71.609	75.400

To identify where existing regulations for Part 71 are relocated in the rule to be effective September 16, 1993, or if the regulations will be relocated in FAA Order 7400.9, the following cross reference lists are provided:

SUPPLEMENTARY INFORMATION: In July 1994, the Federal Aviation Act of 1958 and numerous other pieces of legislation affecting transportation in general were **recodified**. The statutory material became “positive law” and was **recodified** at 49 U.S.C. 1101 *et seq.*

The Federal Aviation Administration is amending the authority citations for its regulations in Chapter I of 14 CFR to reflect the recodification of its statutory authority. No substantive change was intended to any statutory authority by the recodification, and no substantive change is introduced to any regulation by this change.

Although this action is in the form of a **final** rule and was not preceded by notice and an opportunity for public comment, comments are invited on this action. Interested persons are invited to comment by submitting such written data, views, or arguments as they may desire by March 1, 1996. Comments should identify the rules docket number (Docket No. 28417) and be submitted to the address specified under the caption “FOR FURTHER INFORMATION CONTACT.”

Because of the editorial nature of this change, it has been determined that prior notice is unnecessary under the Administrative Procedure Act. It has also been determined that this final rule is not a “significant regulatory action” under Executive Order 12866, nor is it a significant action under DOT regulatory policies and procedures (44 FR 11034, February 26, 1979). Further, the editorial nature of this change has no known or anticipated economic impact; accordingly, no regulatory analysis has been prepared.

Adoption of the Amendment

In consideration of the forgoing, the Federal Aviation Administration amends 14 CFR Chapter I effective December 28, 1995.

The authority citation for part 45 is revised to read as follows:

Authority: 49 U.S.C. 106(g), 40103, 40109, 40113–40114, 44101–44105, 44107–44108, 44110–44111, 44504, 44701, 44708–44709, 44711–44713, 45302–45303, 46104, 46304, 46306, 47122.

SUPPLEMENTARY INFORMATION: In July 1994, the Federal Aviation Act of 1958 and numerous other pieces of legislation affecting transportation in general were **recodified**. The statutory material became “positive law” and was **recodified** at 49 U.S.C. 1101 *et seq.*

The Federal Aviation Administration is amending the authority citations for its regulations in Chapter I of 14 CFR to reflect the recodification of its statutory authority. No substantive change was intended to any statutory authority by the recodification, and no substantive change is introduced to any regulation by this change.

Although this action is in the form of a **final** rule and was not preceded by notice and an opportunity for public comment, comments are invited on this action. Interested persons are invited to comment by submitting such written data, views, or arguments as they may desire by March 1, 1996. Comments should identify the rules docket number (Docket No. 28417) and be submitted to the address specified under the caption “FOR FURTHER INFORMATION CONTACT.”

Because of the editorial nature of this change, it has been determined that prior notice is unnecessary under the Administrative Procedure Act. It has also been determined that this final rule is not a “significant regulatory action” under Executive Order 12866, nor is it a significant action under DOT regulatory policies and procedures (44 FR 11034, February 26, 1979). Further, the editorial nature of this change has no known or anticipated economic impact; accordingly, no regulatory analysis has been prepared.

Adoption of the Amendment

In consideration of the forgoing, the Federal Aviation Administration amends 14 CFR Chapter I effective December 28, 1995.

The authority citation for part 45 is revised to read as follows:

Authority: 49 U.S.C. 106(g), 40103, 40109, 40113–40114, 44101–44105, 44107–44108, 44110–44111, 44504, 44701, 44708–44709, 44711–44713, 45302–45303, 46104, 46304, 46306, 47122.



2





2



powerplant record that accompanies the engine at the time of manufacture of the engine.

(ii) The designation EXEMPT indicates that the engine has been granted an exemption pursuant to the applicable provision of § 34.7 (a)(1), (a)(4), (b), (c), or (d), and an indication of the type of exemption and the reason for the grant must be noted in the permanent powerplant record that accompanies the engine from the time of manufacture of the engine.

(iii) The designation NON-US indicates that the engine has been granted an exemption pursuant to § 34.7(a)(1), and the notation "This aircraft may not be operated within the United States", or an equivalent notation approved by the Administrator of the FAA, must be inserted in the aircraft logbook, or alternate equivalent document, at the time of installation of the engine.

(8) Any other information the Administrator finds appropriate.

(b) Except as provided in paragraph (d)(1) of this section, no person may remove, change, or place identification information required by paragraph (a) of this section, on any aircraft, aircraft engine, propeller, propeller blade, or propeller hub, without the approval of the Administrator.

(c) Except as provided in paragraph (d)(2) of this section, no person may remove or install any identification plate required by § 45.11 of this part, without the approval of the Administrator.

(d) Persons performing work under the provisions of part 43 of this chapter may, in accordance with methods, techniques, and practices acceptable to the Administrator-

(1) Remove, change, or place the identification information required by paragraph (a) of this section on any aircraft, aircraft engine, propeller, propeller blade, or propeller hub; or

(2) Remove an identification plate required by § 45.11 when necessary during maintenance operations.

(e) No person may install an identification plate removed in accordance with paragraph (d)(2) of this section on any aircraft, aircraft engine, propeller,

propeller blade, or propeller hub other than the one from which it was removed.

(Amdt. 45-3, Eff. 7/7/67); (Amdt. 45-10, Eff. 9/4/79); (Amdt. 45-12, Eff. 10/14/80); (Amdt. 45-20, Eff. 9/10/90)

§ 45.14 Identification of critical components.

Each person who produces a part for which a replacement time, inspection interval, or related procedure is specified in the Airworthiness Limitations section of a manufacturer's maintenance manual or Instructions for Continued Airworthiness shall permanently and legibly mark that component with a part number (or equivalent) and a serial number (or equivalent).

(Amdt. 45-6, Eff. 10/17/68); (Amdt. 45-12, Eff. 10/14/80); (Amdt. 45-16, Eff. 1/6/87)

§ 45.15 Replacement and modification parts.

(a) Except as provided in paragraph (b) of this section, each person who produces a replacement or modification part under a Parts Manufacturer Approval issued under § 21.303 of this chapter shall permanently and legibly mark the part with—

(1) The letters "FAA-PMA";

(2) The name, trademark, or symbol of the holder of the Parts Manufacturer Approval;

(3) The part number; and

(4) The name and model designation of each type certificated product on which the part is eligible for installation.

(b) If the Administrator finds that a part is too small or that it is otherwise impractical to mark a part with any of the information required by paragraph (a) of this section, a tag attached to the part or its container must include the information that could not be marked on the part. If the marking required by paragraph (a)(4) of this section is so extensive that to mark it on a tag is impractical, the tag attached to the part or the container may refer to a specific readily available manual or catalog for part eligibility information.

(Amdt. 45-8, Eff. 6/26/72); (Amdt. 45-14, Eff. 4/28/82)

powerplant record that accompanies the engine at the time of manufacture of the engine.

(ii) The designation EXEMPT indicates that the engine has been granted an exemption pursuant to the applicable provision of § 34.7 (a)(1), (a)(4), (b), (c), or (d), and an indication of the type of exemption and the reason for the grant must be noted in the permanent powerplant record that accompanies the engine from the time of manufacture of the engine.

(iii) The designation NON-US indicates that the engine has been granted an exemption pursuant to § 34.7(a)(1), and the notation "This aircraft may not be operated within the United States", or an equivalent notation approved by the Administrator of the FAA, must be inserted in the aircraft logbook, or alternate equivalent document, at the time of installation of the engine.

(8) Any other information the Administrator finds appropriate.

(b) Except as provided in paragraph (d)(1) of this section, no person may remove, change, or place identification information required by paragraph (a) of this section, on any aircraft, aircraft engine, propeller, propeller blade, or propeller hub, without the approval of the Administrator.

(c) Except as provided in paragraph (d)(2) of this section, no person may remove or install any identification plate required by § 45.11 of this part, without the approval of the Administrator.

(d) Persons performing work under the provisions of part 43 of this chapter may, in accordance with methods, techniques, and practices acceptable to the Administrator-

(1) Remove, change, or place the identification information required by paragraph (a) of this section on any aircraft, aircraft engine, propeller, propeller blade, or propeller hub; or

(2) Remove an identification plate required by § 45.11 when necessary during maintenance operations.

(e) No person may install an identification plate removed in accordance with paragraph (d)(2) of this section on any aircraft, aircraft engine, propeller,

propeller blade, or propeller hub other than the one from which it was removed.

(Amdt. 45-3, Eff. 7/7/67); (Amdt. 45-10, Eff. 9/4/79); (Amdt. 45-12, Eff. 10/14/80); (Amdt. 45-20, Eff. 9/10/90)

§ 45.14 Identification of critical components.

Each person who produces a part for which a replacement time, inspection interval, or related procedure is specified in the Airworthiness Limitations section of a manufacturer's maintenance manual or Instructions for Continued Airworthiness shall permanently and legibly mark that component with a part number (or equivalent) and a serial number (or equivalent).

(Amdt. 45-6, Eff. 10/17/68); (Amdt. 45-12, Eff. 10/14/80); (Amdt. 45-16, Eff. 1/6/87)

§ 45.15 Replacement and modification parts.

(a) Except as provided in paragraph (b) of this section, each person who produces a replacement or modification part under a Parts Manufacturer Approval issued under § 21.303 of this chapter shall permanently and legibly mark the part with—

(1) The letters "FAA-PMA";

(2) The name, trademark, or symbol of the holder of the Parts Manufacturer Approval;

(3) The part number; and

(4) The name and model designation of each type certificated product on which the part is eligible for installation.

(b) If the Administrator finds that a part is too small or that it is otherwise impractical to mark a part with any of the information required by paragraph (a) of this section, a tag attached to the part or its container must include the information that could not be marked on the part. If the marking required by paragraph (a)(4) of this section is so extensive that to mark it on a tag is impractical, the tag attached to the part or the container may refer to a specific readily available manual or catalog for part eligibility information.

(Amdt. 45-8, Eff. 6/26/72); (Amdt. 45-14, Eff. 4/28/82)

marks in accordance with §§ 45.21 and 45.23 through 45.33;

(2) In a foreign country unless that country consents to that operation; or

(3) In any operation conducted under part 121, 127, 133, 135, or 137 of this chapter.

(d) If, due to the configuration of an aircraft, it is impossible for a person to mark it in accordance with §§ 45.21 and 45.23 through 45.33, he may apply to the Administrator for a different marking procedure.

(Amdt. 45-5, Eff. 1/12/68); (Amdt. 45-13, Eff. 11/2/81); (Amdt. 45-18, Eff. 8/18/90); (Amdt. 45-19, Eff. 10/25/89); [(Amdt. 45-21, Eff. 9/16/93)]

§ 45.23 Display of marks; general.

(a) Each operator of an aircraft shall display on that aircraft marks consisting of the Roman capital letter "N" (denoting United States registration) followed by the registration number of the aircraft. Each suffix letter used in the marks displayed must also be a Roman capital letter.

(b) When marks that include only the Roman capital letter "N" and the registration number are displayed on limited or restricted category aircraft or experimental or provisionally certificated aircraft, the operator shall also display on that aircraft near each entrance to the cabin or cockpit, in letters not less than 2 inches nor more than 6 inches in height, the words "limited," "restricted," "experimental," or "provisional airworthiness," as the case may be.

(Amdt. 45-5, Eff. 1/12/68); (Amdt. 45-9, Eff. 9/14/77)

§ 45.25 Location of marks on fixed-wing aircraft.

(a) The operator of a fixed-wing aircraft shall display the required marks on either the vertical tail surfaces or the sides of the fuselage, except as provided in § 45.29(f).

(b) The marks required by paragraph (a) of this section shall be displayed as follows:

(1) If displayed on the vertical tail surfaces, horizontally on both surfaces, horizontally on both surfaces of a single vertical tail or on the outer surfaces of a multivertical tail. However, on aircraft on which marks at least 3 inches high may be displayed in accordance with § 45.29(b)(1), the marks may be displayed vertically on the vertical tail surfaces.

(2) If displayed on the fuselage surfaces, horizontally on both sides of the fuselage between

the trailing edge of the wing and the leading edge of the horizontal stabilizer. However, if engine pods or other appurtenances are located in this area and are an integral part of the fuselage side surfaces, the operator may place the marks on those pods or appurtenances.

(Amdt. 45-2, Eff. 7/21/66); (Amdt. 45-9, Eff. 9/14/77)

§ 45.27 Location of marks; nonfixed-wing aircraft.

(a) *Rotorcraft.* Each operator of a rotorcraft shall display on that rotorcraft horizontally on both surfaces of the cabin, fuselage, boom, or tail the marks required by § 45.23.

(b) *Airships.* Each operator of an airship shall display on that airship the marks required by § 45.23, horizontally on-

(1) The upper surface of the right horizontal stabilizer and on the under surface of the left horizontal stabilizer with the top of the marks toward the leading edge of each stabilizer; and

(2) Each side of the bottom half of the vertical stabilizer.

(c) *Spherical balloons.* Each operator of a spherical balloon shall display the marks required by § 45.23 in two places diametrically opposite and near the maximum horizontal circumference of that balloon.

(d) *Nonspherical balloons.* Each operator of a nonspherical balloon shall display the marks required by § 45.23 on each side of the balloon near its maximum cross section and immediately above either the rigging band or the points of attachment of the basket or cabin suspension cables.

(Amdt. 45-15, Eff. 4/18/83)

§ 45.29 Size of marks.

(a) Except as provided in paragraph (f) of this section, each operator of an aircraft shall display marks on the aircraft meeting the size requirements of this section.

(b) *Height.* Except as provided in paragraph (h) of this part, the nationality and registration marks must be of equal height and on-

(1) Fixed-wing aircraft, must be at least 12 inches high, except that:

(i) An aircraft displaying marks at least 2 inches high before November 1, 1981 and an aircraft manufactured after November 2, 1981, but before January 1, 1983, may display those marks until the aircraft is repainted or the marks are repainted, restored, or changed;

marks in accordance with §§ 45.21 and 45.23 through 45.33;

(2) In a foreign country unless that country consents to that operation; or

(3) In any operation conducted under part 121, 127, 133, 135, or 137 of this chapter.

(d) If, due to the configuration of an aircraft, it is impossible for a person to mark it in accordance with §§ 45.21 and 45.23 through 45.33, he may apply to the Administrator for a different marking procedure.

(Amdt. 45-5, Eff. 1/12/68); (Amdt. 45-13, Eff. 11/2/81); (Amdt. 45-18, Eff. 8/18/90); (Amdt. 45-19, Eff. 10/25/89); [(Amdt. 45-21, Eff. 9/16/93)]

§ 45.23 Display of marks; general.

(a) Each operator of an aircraft shall display on that aircraft marks consisting of the Roman capital letter "N" (denoting United States registration) followed by the registration number of the aircraft. Each suffix letter used in the marks displayed must also be a Roman capital letter.

(b) When marks that include only the Roman capital letter "N" and the registration number are displayed on limited or restricted category aircraft or experimental or provisionally certificated aircraft, the operator shall also display on that aircraft near each entrance to the cabin or cockpit, in letters not less than 2 inches nor more than 6 inches in height, the words "limited," "restricted," "experimental," or "provisional airworthiness," as the case may be.

(Amdt. 45-5, Eff. 1/12/68); (Amdt. 45-9, Eff. 9/14/77)

§ 45.25 Location of marks on fixed-wing aircraft.

(a) The operator of a fixed-wing aircraft shall display the required marks on either the vertical tail surfaces or the sides of the fuselage, except as provided in § 45.29(f).

(b) The marks required by paragraph (a) of this section shall be displayed as follows:

(1) If displayed on the vertical tail surfaces, horizontally on both surfaces, horizontally on both surfaces of a single vertical tail or on the outer surfaces of a multivertical tail. However, on aircraft on which marks at least 3 inches high may be displayed in accordance with § 45.29(b)(1), the marks may be displayed vertically on the vertical tail surfaces.

(2) If displayed on the fuselage surfaces, horizontally on both sides of the fuselage between

the trailing edge of the wing and the leading edge of the horizontal stabilizer. However, if engine pods or other appurtenances are located in this area and are an integral part of the fuselage side surfaces, the operator may place the marks on those pods or appurtenances.

(Amdt. 45-2, Eff. 7/21/66); (Amdt. 45-9, Eff. 9/14/77)

§ 45.27 Location of marks; nonfixed-wing aircraft.

(a) *Rotorcraft.* Each operator of a rotorcraft shall display on that rotorcraft horizontally on both surfaces of the cabin, fuselage, boom, or tail the marks required by § 45.23.

(b) *Airships.* Each operator of an airship shall display on that airship the marks required by § 45.23, horizontally on-

(1) The upper surface of the right horizontal stabilizer and on the under surface of the left horizontal stabilizer with the top of the marks toward the leading edge of each stabilizer; and

(2) Each side of the bottom half of the vertical stabilizer.

(c) *Spherical balloons.* Each operator of a spherical balloon shall display the marks required by § 45.23 in two places diametrically opposite and near the maximum horizontal circumference of that balloon.

(d) *Nonspherical balloons.* Each operator of a nonspherical balloon shall display the marks required by § 45.23 on each side of the balloon near its maximum cross section and immediately above either the rigging band or the points of attachment of the basket or cabin suspension cables.

(Amdt. 45-15, Eff. 4/18/83)

§ 45.29 Size of marks.

(a) Except as provided in paragraph (f) of this section, each operator of an aircraft shall display marks on the aircraft meeting the size requirements of this section.

(b) *Height.* Except as provided in paragraph (h) of this part, the nationality and registration marks must be of equal height and on-

(1) Fixed-wing aircraft, must be at least 12 inches high, except that:

(i) An aircraft displaying marks at least 2 inches high before November 1, 1981 and an aircraft manufactured after November 2, 1981, but before January 1, 1983, may display those marks until the aircraft is repainted or the marks are repainted, restored, or changed;



U.S. Department
of Transportation

**Federal Aviation
Administration**

800 Independence Ave., S.W.
Washington, D.C. 20591

Official Business
Penalty for Private Use \$300